

# Regional report on small ports phenomenon in the Dubrovnik- Neretva County

Final version of 05/05/2021

D.4.2.1

Project Full Title	Framework initiative fostering the sustainable development of Adriatic small ports
Project Acronym	FRAMESPORT
Project ID	10253074
Project Website	<a href="https://www.italy-croatia.eu/web/framesport">https://www.italy-croatia.eu/web/framesport</a>
Priority Axis	4 – Maritime Transport
Specific Objective	4.1
Work Package	4
Work Package title	CONVEYING KNOWLEDGE OF MACRO-THEMES INTO ACTIONS
Deliverable Nr.	4.2.1
Status	<del>Draft/Revised</del> /Final
Partner in charge	MMPI
Dissemination Level	Public/ <del>Partnership</del>

#### ACKNOWLEDGEMENT

The work described in this document was supported by the INTERREG V-A IT-HR CBC Programme - “Strategic” Subsidy Contract - Project: “Framework initiative fostering the sustainable development of Adriatic small ports, FRAMESPORT” (Project ID: 10253074).

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## 1. Introduction

The FRAMESPORT project aims to develop a coordinated initiative to support the long-term development of small ports in the Adriatic basin from a strategic perspective. As a result, the goal is to transform small ports into proactive drivers of this coastal area's socio-economic development.

FRAMESPORT will build on existing knowledge and capitalize on the outcomes of pilot initiatives by incorporating them into a new strategic framework aimed at improving the performance of small-scale maritime nodes along the Adriatic coasts.

This strategic goal necessitates a multifaceted and interdisciplinary approach that includes the implementation of concrete pilot projects as well as the identification of priority themes to be promoted as part of the overall strategy. These actions will be implemented from the ground up, with local and national stakeholders involved from the start of the project. Furthermore, the project partners have been chosen to ensure broad geographic coverage. Their mission is to address issues such as planning and management, business model implementation, training and competency enhancement, and the development of Information and Communication Technologies (ICT) tools and services. The project also intends to develop an ICT platform that collects and organizes key data on small ports, intending to use this information to drive sustainable development. The portal will connect the Italian and Croatian sides of the Adriatic basin. This allows for the creation of a more consistent and cohesive network of small ports, businesses, and institutions, as well as the promotion of their long-term performance, infrastructure, and policies to promote their development and growth.

Based on data collected through the WP5 questionnaire, this document aims to depict an overall picture of the current state of the ports and harbours within the Dubrovnik-Neretva county territory by presenting relevant information on existing facilities and single port characteristics and services. Because each document is regional, each region receives adequate attention when describing its initial status.

The following chapters were based on a listing of all of the port areas managed by county port authorities, as well as the current state of the art, which was illustrated through tables and figures showing how small ports in the Dubrovnik-Neretva region compare to other regions on a percentage basis. The main takeaway was to provide the reader with statistical data presenting the levels of adoption of specific trends, port infrastructure and superstructure, and a port's overall offer.

Following that, a SWOT analysis was performed to simplify the external and internal elements that ports in the Dubrovnik-Neretva County region must deal with. Despite its status as a rising competitor in the Mediterranean, the Dubrovnik-Neretva region faces a plethora of opportunities to further develop this sector of business and tourism. Nonetheless, there are some threats, so all of the elements must be considered during the decision-making process.

## 1.1. Purpose of the document

This region-based document aims to depict an overall picture of the current state of the ports and harbours within Dubrovnik-Neretva county territory by presenting relevant information on existing facilities and single port characteristics and services based on data collected through the WP5 questionnaire. Each document is regionally based, so each region receives adequate attention when describing its initial status.

The content of this regional report has been extracted and fragmented so that the partner can provide a document containing a complete set of data on ports and harbours managed by county port authorities within a region.

The statistics in this report do not include privately owned marinas (e.g. ACI Marinas), only ports of regional and local significance under the scope of port authorities.

Information gathered in previous steps, will then be used to complete the detailed picture of the Adriatic Sea's two coastlines, as well as serve as a first source of information for eventually filling the FRAMESPORT platform.

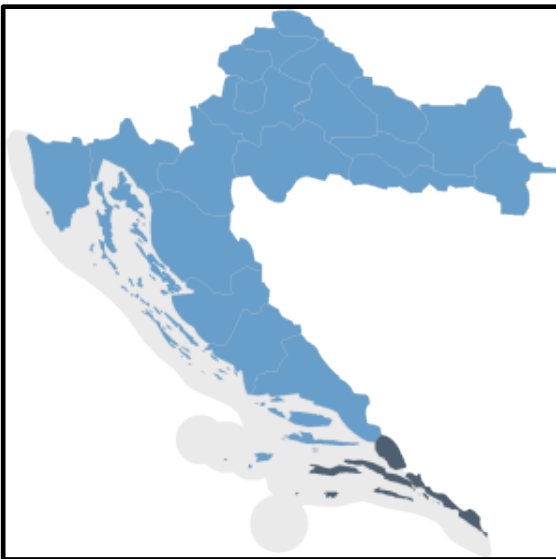
## 2. The region in a nutshell

### 2.1. Geographical context and socio-economic description of the region/county

Dubrovnik-Neretva County is Croatia's southmost county located in the south Dalmatia and, as such, has an appealing geographical position, climate, significant historical significance, and a significant impact on the overall development of both neighbouring areas and the entire gravitational area.

The combined surface of the mainland and the islands is 9.272,37 km<sup>2</sup> (10,32% of the Republic of Croatia's surface) of which 1.782,49km<sup>2</sup> (3,1% of the land surface of the Republic of Croatia) is the land surface and the sea surface is 7.489,88 km<sup>2</sup> (23% of the sea surface of the Republic of Croatia). The County's territorial sea is nearly twice as large as the mainland, but because the economic zone at sea extends to the central part of the Adriatic, the surface of the Dubrovnik Neretva County is much larger and accounts for roughly 80% of its total area. The county has the largest territorial waters and the deepest sea depths of all counties in Croatia.

**Figure 1: Dubrovnik-Neretva County location in Croatia**



The county is divided by the state borderline with Bosnia and Herzegovina, and only in the Lower Neretva Valley does it have a natural connection to the inland as well as a junction towards the north and east Croatia.


The county is divided into two geographical subunits:

- Coastal area with the sting of offshore islands
- Lower Neretva region with the gravitational area

The Lower Neretva coast, islands, and area differ based on basic natural, economic, and cultural characteristics. It should be noted that the County has the largest share of the territorial waters compared to the land in and the deepest sea depths in Croatia. This area is a valuable development resource and potential not only for the County but for the entire country of Croatia, but it also requires systematic and effective public policy measures for the protection and long-term use. The

coast is indented and varies from sheltered coves with sandy beaches to exposed steep shores with cliffs in the open sea.

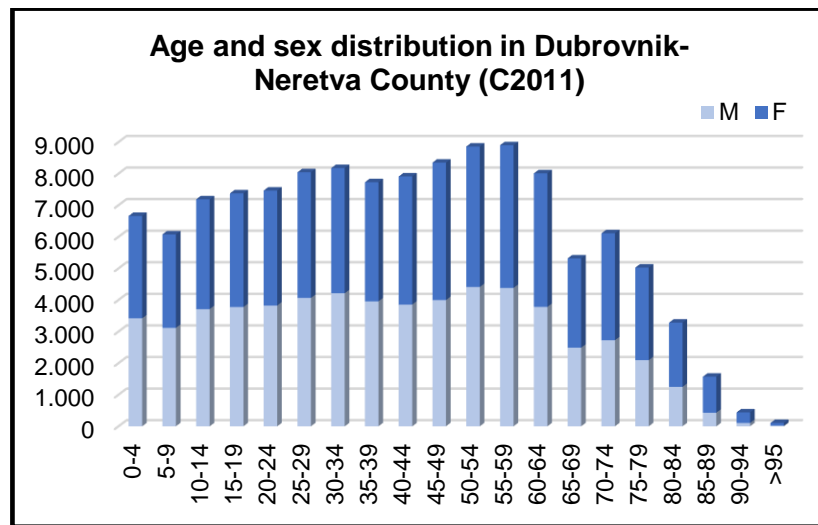
**Table 1: Dubrovnik- Neretva County statistical data as per census 2011**

<b>Dubrovnik-Neretva County as per census 2011</b>	
<b>Symbols (flag and coat of arms)</b>	
<b>Area</b>	9.272.37 km <sup>2</sup>
<b>County seat</b>	Dubrovnik
<b>Settlements</b>	5 towns and 17 municipalities
<b>Population</b>	122.568
<b>Population density (per km<sup>2</sup>)</b>	68,8

The Pelješac peninsula, as well as 223 islands, cliffs, and reefs, make up the coast and islands. The most important inhabited islands are Korčula, Mljet, Lastovo, and the group of Elaphite islands to which Koločep, Croatia's southernmost inhabited island, belongs.

According to the 2011 census, 122.568 people inhabited the area of Dubrovnik-Neretva County of 1.782,49 km<sup>2</sup> (approximately 3,1% of the area of Croatia), representing 2,86% of the Croatian population, of which approximately 32% are employed. According to the 2011 census, the working population totalled 39.120 people (81.39%) of the total population, which is comparable to the Croatian average. Education indicators, i.e. the level of education, show that production opportunities have increased significantly in terms of the quality of human labour.

Figure 2: Gender / age diagram in Dubrovnik-Neretva County as per c2011



The gender and age split largely mirrors the Croatian trend, in which the population is ageing rapidly higher than in the rest of the country, implying that a large number of young and work-capable people are leaving the country in general and moving to western European countries, and inflow rates are virtually non-existent. Population ageing is particularly noticeable on the islands (Lastovo and Mljet), and particularly in peninsula municipalities where the ageing process has progressed to the point where revitalization of the municipal population is no longer possible.

After the Croatian War of Independence, the rapidly ageing of the population took a downward turn. A variety of social and psychological factors are said to be influencing the current situation. Thus, despite the relatively favourable trends in the county population's natural movement and the oscillation of the positive and negative migration balance around small absolute values (which is relatively more favourable compared to Croatia), the true picture of the county population's future shows these types of ages.

Metković, Opuzen, and Ploče, as well as Konavle and Župa Dubrovačka, have shown positive trends in the overall natural movement since 2001. These are the same cities and municipalities as in the previous distribution and overall inter-census population movements indicators. This demonstrates that Dubrovnik-Neretva County has two poles. It is noticeable that the City of Dubrovnik has an overall natural decline in population, despite having a natural growth in 2014. This highlights Dubrovnik's demographic problem, the distinct age of the total Dubrovnik population, while also entering the age groups of the population of more numerous generations of either the domicile or



immigrant population. The natural population decline of island and peninsula municipalities, as well as municipalities in the hinterland but near Metković's secondary county centre, is very significant and barely noticeable. It is a trend shift that confirms the island of Croatia as a high-potential and high-quality living area in climatic and physical-geographical terms. Such a trend confirms the County's still stable population, the relative stability of the fertile contingent, and very certain immigration. It can be concluded that the county population's demographic potential is still stable for the population setting.

The average age of Dubrovnik-Neretva Region residents is 41,5 years. When we consider the average age in all other Croatian counties, this County falls right in the middle. The ageing index and age coefficients are the best indicators of a specific area's age and the ageing process. As a result, it is easy to conclude that the Dubrovnik-Neretva Region is well into the ageing process (the ageing index is 109.4, and the age coefficient is 24.4). If the ageing index exceeds 40% and the age coefficient exceeds 12%, it is assumed that the population of a given area has begun to age. In the total population of Dubrovnik-Neretva County, there are more women (62,947 or 51.36%) than men (59,621 or 48.64%). This ratio is rather similar to the one at the national level (51.78% of women, 48.22% of men).

The economy and other sectors of the Dubrovnik-Neretva Region are deeply affected by its geographic position, the length, indentation, and quality of its coast, the rich cultural and historical heritage, natural panoramas, buildings that fit perfectly into the landscape, numerous protected areas in terms of geology and nature, but also architectural and historical terms, all of which make the Region a valuable and attractive resource.

The main feature of the Region's economy is that it is dominated by tertiary industries, with a much smaller share of primary and secondary sector activities. The entire economy is heavily reliant on the hospitality and tourism industries, as well as agriculture and maritime transport. The microregion surrounding the Neretva River is primarily focused on the agriculture sector, trade, and transportation. The centres of the Dubrovnik microregion are dominated by the hospitality and tourism industries, and the orientation towards industry, specifically agriculture, fisheries, transportation, and communication, can be seen in the centres of the island of Korčula.

Natural characteristics and traditions over the past decades indicate significant tourism development opportunities but also significant agricultural opportunities. Because of the wide variety of microclimate types and its geographical location, this Region can thrive all types of agricultural plants which are not available elsewhere in Croatia. Even the most sensitive species of

fruit trees, such as citrus fruits, as well as vegetables and flowers in open areas, grapevines for top quality white and red wines of protected origin, olive trees, and so on, are grown in the Dubrovnik-Neretva County area. Microregions such as Mali Ston Bay are ideal for mariculture.

Investments in renewable energy sources, which use wind, water, sun, and biomass to improve the country's economy's competitiveness in the market, have recently made a significant contribution to the overall economy. Renewable energy sources play a critical role in reducing carbon dioxide (CO<sup>2</sup>) emissions into the atmosphere. The growing use of renewable energy sources improves the system's energy sustainability and reduces reliance on imported energy-producing materials and electricity. Following the development plans for the Dubrovnik-Neretva County, in collaboration with other institutions, continuously supports investments in renewable energy sources. The most common is the use of solar energy due to the natural advantages of the county's geographical location.

Almost all renewable energy sources are now used to some extent in the county, and public awareness of the exceptional resources generated by these sources is growing. Along with economic operators, an increasing number of households choose these sources of energy, releasing resources from existing energy systems and allowing for further energy redistribution into the economy. Aside from solar energy, it is also extremely suitable for generating energy from wind power, which is a growing process.

The cities are the main business and thus economic centres, with a special emphasis on Dubrovnik as an administrative, historical, cultural, and economic centre with approximately 46% of the County's active population and 25% of the County's total accommodation capacity.

In economic and transportation terms, the main determinants of economic development remain tourism, agriculture, and the use of the sea. In the future, economic development should be focused on expanding the wine-growing and olive-growing sectors, followed by a focus on fisheries and mariculture, the hospitality industry and tourism, shipping, road and port traffic, and environmentally friendly production.

The construction sector is constantly contributing to the development of economic capacities as a result of investments. Near Dubrovnik, one can easily notice a process of urbanization and greater independence of the Rijeka dubrovačka suburban area, particularly of the municipality of Župa Dubrovačka. On the Elaphites, Dubrovnik's nearest island area, one can observe a self-sufficient

development of the settlements as a result of significant investments in the tourism sector and a high rate of connectivity in terms of maintaining maritime connections even during the winter.

Along with the intensification of the urbanization process, an expansion of the city of Dubrovnik's territory eastward in the direction of Cavtat and Konavle, as well as the expansion of the Dubrovačko Primorje towards Slano and Banići, is planned. In such an expanded area of the city of Dubrovnik, conditions will be created for significant population growth, which will ensure a high standard of living following the economic environment.

The Pelješac peninsula is now in full swing of development, particularly through Ston as a connecting area and a place with cultural and historical heritage, a place with renewed tourist and historical infrastructure (the Walls), and investments in port infrastructure that allows ships to dock near the salt pans and the Walls of Ston, thus making a much larger area significantly accessible.

Orebić is beginning to develop as a regional centre, resuming an important role, particularly as a point of connection with the island of Korčula via a permanent ferry connection, making the transport area between Ston and Orebić more appealing and providing the possibility of further development by utilizing the wine-making and olive-growing sectors for tourist and commercial purposes.

Aside from tourism and shipbuilding, various traditional crafts (stonemasonry, wooden boat building...) are a source of economic activity on the island of Korčula. There has been an increase in investments in the sectors of olive-growing, wine-growing, fisheries, and vegetable growing, as well as the inevitable establishment of smaller facilities for the processing of agricultural products, the bottling and processing of protected wines, the processing of olives and olive oil production, the production of citrus fruits, and the establishment of locations for fish processing and trade. Smaller regional centres are emerging on the island of Korčula's outskirts, including the city centre of Korčula and the western part of the island, Blato – Vela Luka, which are linked by the local centres of Lumbarda, Čara, and Smokvica.

Lower Neretva and its central area, which is the backbone of development, can be expected to see further development of the urbanization process, which is dominated by important city and regional centres, namely Metković, Opuzen, and Ploče. The economy of the Neretva valley is geared toward the development of agriculture and the tertiary sector (hospitality industry, trade and transport). The future development of Ploče is inextricably linked to the plans and activities related to the Port

of Ploče port opened for international traffic and proclaimed as a port of outstanding international economic interest for the Republic of Croatia.

Metković's noteworthy geographic and geo-strategic location as a border area on a major inter-state transportation corridor are requirements for its development. Natural resources, as well as cultural and historical assets, have distinct characteristics, particularly in the Naronia archaeological zone. In the case of Opuzen, the opening of several minor processing plants in conjunction with the development of agriculture is a reasonable expectation.

The Gross domestic product of Dubrovnik-Neretva county for 2018 was € 1.586.851,38 or 3% of Croatia's total gross domestic product. The GDP per capita is €13.227.

## 2.2. Regional transport and mobility overview and main features

At all income levels, transportation infrastructure is a critical component of economic development. It promotes both personal well-being and economic growth. Indirectly, infrastructure contributes to economic development through a variety of channels, including the facilitation of productive private investment, the creation of new activities (supply chains), and the reshaping of economic geography.

Transportation infrastructure is a necessary input in the production of transportation services, which are necessary to allow for the market exchange of final goods and inputs (including labour) – or for broader welfare benefits (e.g., travel time savings). Transportation infrastructure is frequently referred to as the "backbone" of a modern economy due to its critical economic role.

Because of its extensive use of infrastructure, the transportation sector is an important component of the economy and a common tool for development. This is especially true in today's global economy, where economic opportunities are increasingly linked to people's and goods' mobility, as well as information and communication technologies.

Several infrastructure investments are either in the planning stages, are currently underway, or have already been completed recently. The county's largest investments have been in transportation infrastructure, so it has new and modernized roads, a renovated and expanded airport and port infrastructure, and the groundwork for solving railway infrastructure has been laid. Energy and community infrastructure projects are also important.

### Road traffic

The Dubrovnik-Neretva County is currently linked by a motorway that extends to Ploče. In the state road transportation network system, the Dubrovnik-Neretva Region is located at the very end of the Adriatic highway (D8), which is mostly in disrepair, especially given that it was built to accommodate a much lower traffic volume than the current number of vehicles per year.

The Zagreb-Split-Dubrovnik highway is part of the road network that connects Croatia's continental and Dalmatian regions. So far, a total of 34 kilometres of highway have passed through the County, terminating at Ploče. This will be extended in the future to Pelješki most, and then to Dubrovnik.

The highway that ends in Ploče is also a highway that connects Ploče with the hinterland as it extends directly to the Bosnian border.

The Dubrovnik (Osojnik) – Dubrovnik Airport – Debeli Brijeg expressway would connect the majority of the Region's tourist capacities with the City of Dubrovnik and the Dubrovnik Airport, as well as integrate the Dubrovnik Airport and the Dubrovnik maritime port into the Region's and country's transportation system. There are plans to build an access road on the D414 state road across Pelješac from the Pelješac Bridge to the Janjina bypass, the Janjina bypass itself, the Potomje bypass, the new section from Kapetani to Orebić, the Orebić bypass, the Perna port junction, and the St. John-Kneza Bridge (underwater tunnel) across the Korčula Canal.

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The road network in the Dubrovnik-Neretva Region is made up of 17 state roads, 33 county roads, and 72 local roads. The municipalities' transportation connectivity via bus lines is insufficient.

### **Maritime transport**

Maritime transport is especially important for the Region because, along with air transport, it has the greatest growth potential. When it comes to systematically addressing the issues of effective and profitable transportation connectivity, the Region's highly indented coastline, as well as a relatively large number of islands with a small population, present unique challenges.



The county is home to two ports open to international public traffic and of special international and economic interest to the Republic of Croatia: Ploče and Gruž, as well as six smaller regional ports and 74 local ports. All of these ports have significant infrastructure value.

The port of Gruž is a passenger port, and it is especially important as a cruising port, as it is the largest on Croatia's Adriatic coast (along with Zadar). This port only handles passenger transport and does not handle cargo operations.

Gruž Port is planning a large investment that will allow it to become a modern passenger port with new passenger terminals and passenger admission services. The plan is to unify all transport terminals during the renovation of the maritime passenger terminal – alongside the maritime passenger terminal, there should be a city bus terminal as well as an international one, an international tourist terminal, and a terminal for buses transporting passengers to the airport. Ferry and vessels connecting the Elefiti islands are planned to move into the Batahovina area (past the bridge)

**Figure 3: Investments in the port of Gruž 2009-2023)**



In addition to the Batahovina II project, the Port Authority of Dubrovnik intends to construct an important infrastructure in the form of a passenger terminal and all associated infrastructure.

Because of its location, the port of Ploče is extremely important for the economy of neighbouring Bosnia and Herzegovina, whose state border is only 25 kilometres from the port of Ploče, as well as for partners from Serbia, Montenegro, Hungary, and other Central European countries. The construction of a new bulk cargo terminal, a new container terminal, a new liquid cargo terminal, and the concession of liquefied petroleum gas are all critical concerning the port of Ploče.

### **Rail-road traffic**

Due to territorial disconnection, the Dubrovnik-Neretva region is not rail-connected to the Split-Dalmatia region (or continental Croatia) (Neum corridor cutting county in half). As part of the Vc corridor, rail currently runs from the ports of Ploče and Metković to Sarajevo and then to Osijek.

There is a plan in railroad transportation to modernize the Ploče – Metković – Sarajevo – Osijek – Budapest railroad on the European transport corridor Vc. There is also the possibility of constructing a faster railroad along the Adriatic coast (after 2022) that would connect Anatolia (Asia Minor) with Western Europe.

In the County, two railway stations are planned: one in the larger Dubrovnik – Osojnik area and one in the larger Ploče area.

### **Air traffic**

The air transport system, which operates out of Dubrovnik Čilipi Airport (IATA: DBV), currently connects the Region to the rest of the world. It accounts for more than 65% of all tourists who visit Dubrovnik, demonstrating its importance in terms of transportation and economy.

After Zagreb and Split, Dubrovnik airport is the third-largest in Croatia. In 2019, 2.896.412 passengers used this airport's services, a 14% increase over 2018. Significant drops were observed in 2020 and 2021 due to the COVID-19 pandemic. The airport connects Dubrovnik with numerous destinations in the EU but also outside of the EU, with the majority of passengers flying to Dubrovnik arrive from London, Zagreb, Pariz, Manchester, Dublin, Helsinki, Madrid, Frankfurt and Barcelona. In 2021 Dubrovnik airport connected Croatia with overseas locations such as New York via Newark airport with United and Delta and Istanbul with Turkish Airlines.

Dubrovnik airport is in the midst of an investment cycle which started in 2010 to expand and modernize the airport. The airport is currently undergoing an exceptional investment surge that will make it the most modern airport in these parts, with a completely rebuilt runway, passenger admission terminals, additional content provided, and so on.

### 2.3. Overall governance and transport planning references

Dubrovnik-Neretva County is Croatia's southmost county located in the south Dalmatia and, as such, has an appealing geographical position, climate, significant historical significance, and a significant impact on the overall development of both neighbouring areas and the entire gravitational area. On the mainland and the islands, the county is made up of 5 cities and 17 municipalities. The county seat is located in Dubrovnik.

The County Prefect preside over the County Assembly, a body of residents that adopts acts on the county's rights and responsibilities as a regional self-government organization. Members of the County Assembly are referred to as "the councillors," and they are elected every four years. As president of the assembly, the Prefect of the county wields executive power.

The county is home to 85 regional and municipal ports. Dubrovnik Gruž is the county's largest passenger port and a port of special - international economic interest for the Republic of Croatia, as is the port of Ploče, which is Croatia's second-largest cargo port and very important for Bosnia and Herzegovina as the country's exit to the sea. The county is home to the international airport of Dubrovnik, one of only a few with intercontinental connections.

The county is connected to the rest of Croatia via highway A1 – running from Zagreb to Ploče (in future Dubrovnik) and via ferry with Montenegro to the port of Bari.



### 3. Analysis of regional ports phenomenon

This analysis of the regional small port phenomenon is the result of research done based on a questionnaire developed by International University Venice (IUAV) and filled using the EU survey platform in WP3), and this data is critical for completing the database that will feed the portal that is being developed and for providing a picture of the state of the territory's small ports, which will be one of the portal's features.

The Dubrovnik-Neretva County include two ports of county importance, according to the order on the classification of ports open to public traffic: Ploče and Dubrovnik-Gruž.

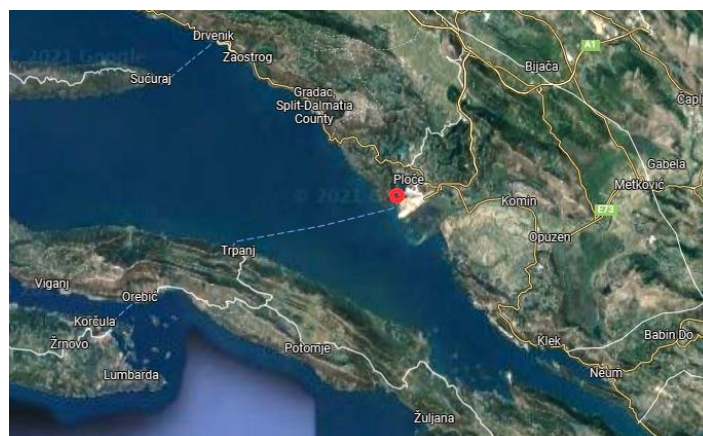
Ports of County and local public ports (26 in total) are managed by 5 county port authorities, the founder of which is the Dubrovnik-Neretva County: County Port Authorities of Dubrovnik-Neretva County, Dubrovnik, Korčula, and Vela Luka.

#### 3.1. Port of Ploče Authority

The Ploče Port Authority is a non-profit public institution. On February 13, 1997, the Croatian Government Resolution established the Ploče Port Authority for the management, development, and use of the Port of Ploče.

The port of Ploče, according to its purpose, is a port open to international public traffic, and due to its size and significance, it has been designated as a port of outstanding international economic interest for the Republic of Croatia.

**Figure 4: Port of Ploče**



The Port Authority's mission is to create all of the conditions necessary for the development of the Port of Ploče into a competitive location that will satisfy port users in terms of speed, quality, reliability, security, economy, and productivity of services provided in the port. The effects of the port service, both direct and indirect, on the economy of the local community and the state as a whole are given special consideration.

The Port Authority's activities include:

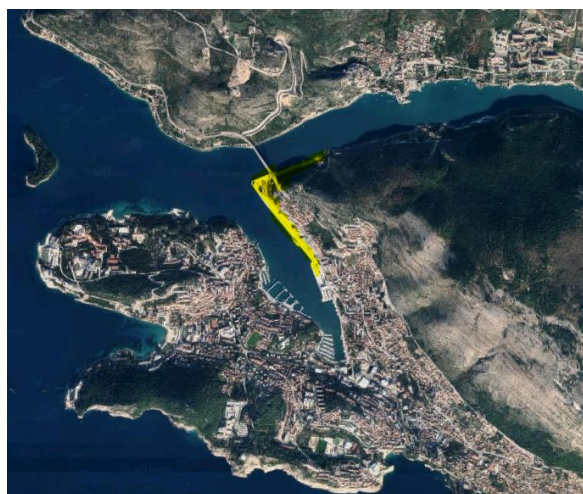
- responsibility for the construction, maintenance, management, protection, and enhancement of the port area in Ploče and Metković,
- ensuring continuous and uninterrupted port traffic performance, technical-technological unity, and navigational safety
- harmonization and supervision of concessionaires engaged in economic activity in the port area
- Management of free zone in the port area.

Port of Ploče, as mentioned, is cargo port hence it offers no berths for nautical tourism.

### 3.2. Dubrovnik port authority

According to the formal - legal definition of the Republic of Croatia's port system, the port of Dubrovnik is classified as a passenger port open to public traffic, and it is one of six ports of international economic interest to the Republic of Croatia. The Ministry of the Sea, Transport, and Infrastructure, the Maritime Transport Administration, the Maritime domain, and the port are directly responsible for the port's management.

**Figure 5: Port of Gruž in yellow**



Due to the presence of specific types of traffic, the port of Dubrovnik stands out among the ports in the Croatian part of the Adriatic for its focus on cruiser traffic for some lines even used as home port. The port has a more pronounced representation of regular traffic for other Adriatic passengers, such as Split, Sibenik, and Zadar. Smaller cruise ships are welcome in ports of the county and local importance that are profiled in the direction of cruising. Although port operations are governed by the same formal - legal framework, their business orientation in terms of traffic type necessitates the organization of the business process and the content of business activities, as well as the goals set before the port.

Except for cruising vessels, the port of Gruž connects neighbouring islands to Dubrovnik. Two lines connect the Elaphite Islands of Sipan, Lopud and Koločep. Gruž is the starting point for the line that connects Dubrovnik to the ports in Split-Dalmatia County: Korčula - Hvar - Bol - Split, and because it is a port open to international traffic it is a homeport for the international line connecting Croatia and Montenegro and ports of Dubrovnik with Bar.

Dubrovnik's port is situated on 20.000m<sup>2</sup> of surface area, and the quay length intended for berthing and operations is 1400m, with a minimum draft ranging between 6 and 12m.

Port / Harbour	Max. Vessel length (m)	Minimal seabed depth (m)	Port entrance width (m)	Total port area (incl. Service activities) (m <sup>2</sup> )
Gruž	90	5,5	No restrictions	20.000

Port Authority Dubrovnik shares a small portion of 90m of the 1400m quay length for nautical vessels other than passenger transport vessels and ferries or even service vessels such as police or customs).

The remaining 60m of the same quay belong to the County port Authority of Dubrovnik which will be mentioned below.

Dubrovnik is historically known as Ragusa and it is one of the most prominent tourist destinations in the Mediterranean Sea, a seaport and the centre of Dubrovnik-Neretva County.

Thanks to its history dating back to the 7th century when refugees from Epidaurum founded Ragusa (Ragusa Vecchia). It was under the protection of the Byzantine Empire at the time and later came under the control of the Republic of Venice. Dubrovnik ruled as a free state between the 14th and 19th centuries. The city's prosperity was historically based on maritime trade; as the capital of the maritime Republic of Ragusa, it attained a high level of development, particularly during the 15th

and 16th centuries, becoming notable for its wealth and skilled diplomacy. At the same time, Dubrovnik established itself as a cradle of Croatian literature.

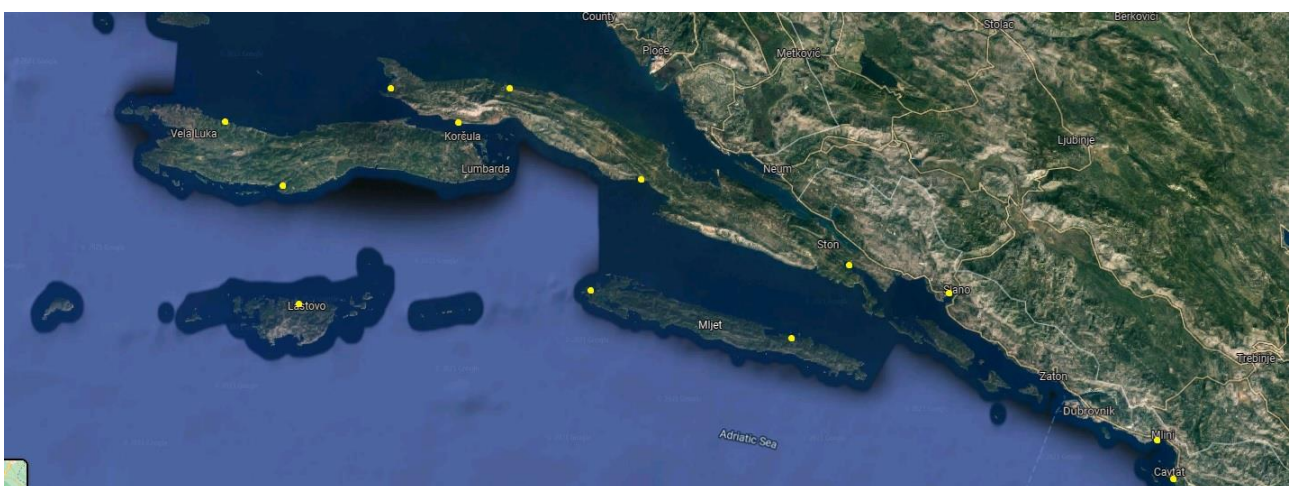
### 3.3. Dubrovnik-Neretva County Port Authority

The Port Authority of Dubrovnik-Neretva County was established on July 15, 1997, for managing, building, and using the City Port and other public-traffic ports in the Dubrovnik-Neretva County port area.

The port authority handles a total of 57 ports and harbours in Dubrovnik-Neretva County, making it one of the biggest port authorities in terms of the number of ports under the authority's management, however, only 13 offer berths for nautical tourism and they will be part of study going forward. Dubrovnik-Neretva County port authority has ports on both mainland and the county's archipelago's island and they extend from Croatia's southernmost point, Prevlaka, over the islands of Lastovo, Mljet, and Korčula, and the Republic of Croatia's second-largest peninsula, Peljesac.

The vast majority of these ports are unusual in that they lack a specifically designated area for nautical vessels, implying that the ports were not developed for nautical tourism and thus the infrastructure is not suited to this type of tourism. Berths are typically designated sections of the coast for nautical tourism, and if no nautical vessels are present, they are used for other purposes. The majority of basic services are available, and some additional services can be arranged on request, but they do not meet the needs of boaters. Because the majority of ports are located in town centres, all services such as restaurants, stores, and hairdressers are available all year.

**Figure 6: Ports and harbours under Dubrovnik-Neretva County Port Authority management**





Ports under Dubrovnik-Neretva County Port Authority include:

1. Brna Harbour – 13 berths
2. Cavtat Harbour – 16 berths
3. Kućište Harbour – 10 berths
4. Lovište Harbour – 5 berths
5. Pomena Harbour – 9 berths
6. Prigradica Harbour – 5 berths
7. Prožura Harbour – 2 berths
8. Slano Harbour – 5 berths
9. Srebreno Harbour – 7 berths
10. Ston Harbour – 5 berths
11. Trpanj Harbour – 11 berths
12. Trstenik Harbour – 10 berths
13. Zaklopatica Harbour – 14 berths

The ports managed by the port authority vary in size, as shown in the chart below, and can be divided into two categories: small and medium (compared to other ports in Croatia).

**Table 2: Dubrovnik-Neretva Port County Authority - general information**

Port / Harbour	Max. Vessel length (m)	Minimal seabed depth (m)	Port entrance width (m)	Total port area (incl. Service activities) (m <sup>2</sup> )
Brna	25	2,5	250	5.286
Cavtat	70	5	-	18.654
Kućište	15	3	-	n/a
Lovište	30	3	302	3.686
Pomena	60	2,5	212	396.298
Prigradica	40	3,5	117	13.953
Prožura	20	2,5	186	2.891
Slano	40	2,8	315	n/a
Srebreno	30	2,3	-	4.942
Ston	60	2	100	8.175
Trpanj	75	3,5	149	n/a
Trstenik	20	3	195	10.061
Zaklopatica	55	2,5	49	n/a

The size of a port is related to its location (island or mainland), proximity to larger cities or smaller towns, as well as the size of the population that gravitates to it, which is related to the development

of the area around the port, services offered both to locals and tourists who stop there to spend the night or use services such as restaurants or possibly some personal services.

The infrastructure used varies greatly from port to port. All berthing structures are solid (permanent), with little to no plans to upgrade and expand their size to accommodate growth and all interested tourists (yachters/boaters), indicating that these ports are primarily for local use and that no strategy has been developed to change that. The majority of ports doesn't have a breakwater that protects the port and the boats that are berthed from possible inclement weather. Restrictions in terms of the width of the port entrances are the result of the port's location as well as possible reefs, cliffs, or island shapes.

The port typology covered in this inquiry is reflected in berth turnover. According to Croatian law, port authorities do not handle special purpose ports – marinas because they are under the concession (as are other business facilities on the maritime demesne), hence they are not part of this study.

All ports managed by this port authority can handle vessels with sails and self-propelled vessels, albeit some ports are smaller and some are larger due to berth size constraints in the port.

### 3.4. County Port Authority Dubrovnik

The Dubrovnik County Port Authority was established on April 19, 2005, by a decision of the Dubrovnik-Neretva County Government, under Article 31 of the Seaports Act (National Gazette 108/95) and Article 13 of the Institutions Act (National Gazette 76/95). 93), and was registered with the Commercial Court in Dubrovnik on April 21, 2006, for the management, construction, and use of the City Port of Dubrovnik and 15 other ports open to public traffic in the Dubrovnik - Neretva County port area.

The port authority handles a total of 15 ports and harbours in Dubrovnik-Neretva County, however, only 4 offer berths for nautical tourism and they will be part of the study going forward. County port authority Dubrovnik has ports on both mainland and the county's archipelago's Elafiti islands: Jakljan, Šipan, Lopud and Koločep.

Ports under authority:

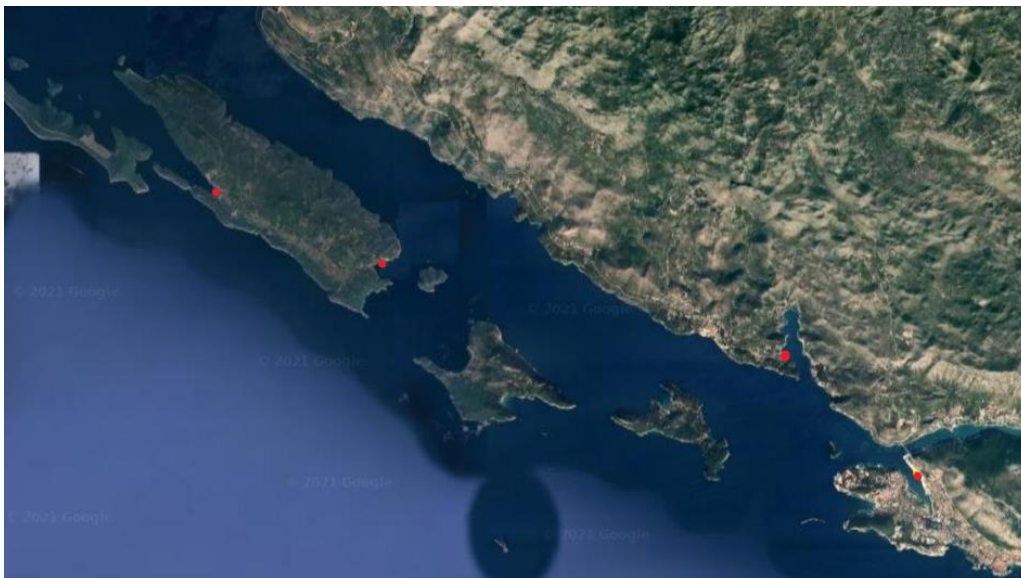
1. Gruž Harbour – 5 berths
2. Šipanska Harbour – 10 berths

3. Suđurađ Harbour – 12 berths
4. Zaton Harbour – 8 berths

Ports locations are highlighted in figure 7.

Suđurađ and Šipanska Luka are the only settlements and ports on the island of Šipan (one of three Elafiti Islands). Suđurađ 's port is connected by ferry to the islands of Lopud and Koločep, as well as the city of Dubrovnik, with two regular lines running throughout the year. There used to be a ferry line that called at Šipanska Luka, but it was cancelled due to a lack of demand as only 450 inhabitants is living permanently on the island.

**Figure 7: Ports under County Port Authority of Dubrovnik's Authority**



The name of the harbour of Zaton refers to a port in the same-named bay just outside of Dubrovnik.

**Table 3: Dubrovnik-Neretva Port County Authority - general information**

Port / Harbour	Max. Vessel length (m)	Minimal seabed depth (m)	Port entrance width (m)	Total port area (incl. Service activities) (m <sup>2</sup> )
Gruž	25	2	250	5.286
Šipanska	70	4	-	18.654
Suđurađ	15	3	-	n/a
Zaton	30	3	302	3.686

All of the ports under the Authority's jurisdiction are considered as small ports that are not sized or equipped to handle larger ships and serve primarily the local population. There is a great seasonality in all ports witnessed in other Croatian seaports, given that there are no lines in any port during the winter, and more space is required in the summer. According to the information we received from the port authority, not all ports allow sailors to enter, and there are currently no plans to expand in terms of tourism.

### 3.5. County Port Authority Korčula

On April 1, 2007, the Korčula County Port Authority was formed by the dissolution of the joint Dubrovnik-Neretva Port Authority. The decision to separate was made by the County Government at the time, and it was confirmed by the County Assembly of the Dubrovnik-Neretva County. The Korčula County Port Authority's bodies are the five-member Administrative Council of the Korčula County Port Authority and the Director. The five-member Administrative Council is made up of three county representatives, one Ministry of Sea, Transport, and Infrastructure representative, and one concessionaire representative.

The County Port Authority employs eight people, including a director who is chosen through a public tender process every four years, an assistant director for technical affairs, a technical affairs officer, a legal, general, and personnel officer, an administrative officer, and port operators.

Port authority manages the following ports on the Island of Korčula:

- Dominče Harbour – 3 berths
- Istočna Riva Harbour – 3 berths
- Luka Kneža Harbour – 4 berths
- Račišće Harbour – 2 berths
- Uvala Luka Harbour – 5 berths
- Zapadna Riva Harbour – 10 berths
- Zavalatica Harbour – 5 berths

**Table 4: Dubrovnik-Neretva Port County Authority - general information**

Port / Harbour	Max. Vessel length (m)	Minimal seabed depth (m)	Port entrance width (m)	Total port area (incl. service activities) (m <sup>2</sup> )
Dominče	77	2,7	190	22555



<b>Istočna riva</b>	101	5,5	-	125211
<b>Luka Kneža</b>	60	2,5	-	1759
<b>Račišće</b>	8	1,5	200	7992
<b>Uvala Luka</b>	50	2,5	203	60697
<b>Zapadna Riva</b>	35	2,2	-	121282
<b>Zavalatica</b>	77	2,2	390	4462

Korčula, a southern Dalmatian island, stretches parallel to the nearby mainland in a west-east direction. It is the sixth-largest Adriatic island, measuring 46,8 kilometres in length and 5,3 to 7,8 kilometres in width. At its narrowest point, the Peljesac Channel, which separates it from the Peljesac peninsula, is 1.270 m wide. The shoreline of Korčula island is 182 kilometres long, and the shorelines of the nearby islets are 54 kilometres long. The island is part of the Dubrovnik-Neretva County, has a land area of 279 km<sup>2</sup>), and has a population of 16.182 people according to the 2001 census which makes it the second most populated island in Croatia (after the island of Krk).

People have been inhabiting this island since prehistoric times. Vela Špilja has the oldest finds from the Old Stone Age.

The island has a long and rich history and heritage and has been inhabited since prehistoric times, with the earliest discoveries dating from the older stone age. According to legend, the island was inhabited in the 12th century BC by the Trojan hero Antenor, who is also known as the founder of Padua. The Illyrians were the second wave of human settlers.

Korčula's coast is heavily indented, with numerous bays and coves. Its north shore is relatively low and easily accessible, with several natural harbours sheltered from the south (jugo) and easterly winds: Korčula, Banja, Racisce, Vrbovica, Babina, and Prigradica. The south shore is more indented but steeper in places, with cliffs rising up to 30 meters out of the sea. Some many anchorages and bays are protected from the northern winds but open to the southern winds: Zavalatica, Rasohatica, Orlandusa, Pavja Luka, Pupnatska Luka, Prizba, Grscica, Brna, and so on, and are protected from both the bura and the jugo. The island is also home to the towns of Vela Luka and Blato, as well as the coastal villages of Lumbarda and Racisce, and Zrnovo, Pupnat, Smokvica, and Cara in the interior.

### 3.6. County Port Authority of Vela Luka

The Dubrovnik-Neretva County County Assembly established the Vela Luka County Port Authority as a non-profit legal entity for the management, construction, and use of a port of county and local importance open to public traffic, in the area of the Municipality of Vela Luka, following Article 75

of the Maritime Property and Seaports Act (National Gazette 158/03). The Vela Luka County Port Authority was established on April 19, 2005 (National Gazette 5/05), and it began operations on November 1, 2005.

Port area of the county and local importance includes areas intended for liner shipping, communal mooring (including a mooring of a vessel whose owner has a permanent residence in the area of the local authorities or a vessel that is predominantly domiciled in that area and entered in the register of ships of the competent port authority or the logbook of boats of the competent port authority or branch office).

Construction, maintenance, and modernization of port infrastructure and assets in public-access ports are carried out following a ten-year development plan of the Republic of Croatia Port System, which is detailed in the annual port work and development program. The Croatian Parliament adopts the port system's decade-long development plan at the request of the Croatian Government, while the Port Authority Board approves the port's annual work and development program based on the Director's proposal.

Port of Vela Luka is a port open to public transport of county and local importance. The port area consists of the coastal land part and the associated waters.

Port of Vela Luka consists of 5 port basins:

1. Port Basin 1 – 16 berths for nautical tourism
2. Port Basin 2 – Terminal – no berths
3. Separated Port Basin – Plitvine Bay – no berths
4. Separated port Basin – Ošjak anchorage – no berths
5. Separated port Basin – Gradina Bay – no berths

**Figure 8: Port of Vela Luka areas**



Vela Luka is located in the western part of the island of Korčula, in a 9.2 km long bay that is one of the best anchorages on the Adriatic's east coast. There are picturesque islands, deep bays, steeply cut cliffs, and fertile gentle plateaus in the surrounding area, making this area suitable for living and rest. Vela Luka is now a peaceful Mediterranean town focused on traditional agriculture, fishing, and tourism. The natural beauty of the landscape and the unspoiled nature make it ideal for tourism. The surroundings are distinguished by a gentle, hilly relief, with Hum being the highest peak (376m). It has ferry connections to Split, Lastovo, and Hvar.

**Table 5: Dubrovnik-Neretva Port County Authority - general information**

Port / Harbour	Max. Vessel length (m)	Minimal seabed depth (m)	Port entrance width (m)	Total port area (incl. Service activities) (m <sup>2</sup> )
Port Basin 1	24	3,5	100	5.840.000

Only port Basin 1 has berths for nautical tourism, hence only this port area has been analyzed.

### 3.7. Overall description of available services for users (technical services, nautical services, waste collection, touristic services)

Marine services are port-related activities that are carried out to ensure the safe and efficient flow of vessel traffic in port approaches and harbours, as well as a safe stay at berth when moored or at anchor. Safe port conditions ensure that vessels using the port, the port environment, and the marine environment are safe.

Port location has a significant impact on the availability of port services; ports located closer to cities or with bigger gravitational populations generally provide more services to their customers, whereas ports located on an island and not close to larger towns may only provide basic services. The situation with port services is also affected by seasonality, where trends were noticed where certain services are available during seasons to better cater to nautical tourists visiting during the summer season. During research and data collection, the author noticed that different groups of services have different providers in different port authorities, i.e. some are centralized and provided by the port authority, while others are provided under concession.

Data was collected based on questions posed by a partner IUAV, and findings will be presented in the upcoming chapter for 26 ports under the Dubrovnik-Neretva County port authority.

#### 3.7.1. Nautical technical services

The Port services are the provision activities required to ensure the Port's operation, to enable maritime traffic operations to be carried out in conditions of safety, efficiency, regularity, continuity, and non-discrimination.

The function of mooring and unmooring services is to pick up a vessel's mooring lines, take them, and attach them to the elements arranged for this purpose on docks or moorings, in the mooring sector designated by the Port Authority, and in the order and layout convenient for docking, unmooring, and undocking operations.

The function of unmooring a vessel's mooring lines from the fixing elements to which it is moored, under the sequence and instructions provided by the captain and without affecting the conditions of the vessels moored next to it. Mooring services are provided by port authority employees and are available at all ports in Dubrovnik-Neretva County (100% coverage). In the ports managed by the Dubrovnik-Neretva County Port Authority, two people are employed on average throughout the

year, with at least another two employed during the tourist season; however, the number of people performing mooring in ports varies between one and five.

All (100%) of the county's ports offer round-the-clock (0-24h) mooring service 365 days a year, and all (100%) of the county's ports offer emergency mooring.

Presence of the basic services in the port:

**Table 6: Statistical representation of basic services in the ports**

Lifting and lowering the vessel into the sea - <b>23%</b>	Vessel storage space <b>0%</b>
Hull washing – <b>3,8%</b>	Trailer for moving the vessel - <b>0%</b>
Temporary storage space - <b>0%</b>	Cranes (self-propelled, land) – <b>7,7%</b>

Table 6 shows that services such as lifting and lowering into the sea, vessel storage and/or crane, and so on are scarce in county ports, owing primarily to the fact that such services necessitate certain space to install such infrastructure and superstructure and to perform such services, and it also shows that the vast majority of the county's ports lack this kind of space, resulting in a very low percentage of ports offering such services.

For a specific service to provide engine maintenance and repair services, marine engine manufacturers require extensive training programs that lead to the certification which must be verified and constantly upgrade its knowledge to provide a high level of service. Because the port must ensure a large enough area for vessel manipulations with all the necessary infrastructures and superstructure elements, the availability of boat repairing service/overhaul shipyard falls under the segment of the high-end port level of equipment.

**Table 6: Statistical representation of bot services/maintenance offer in Dubrovnik-Neretva county ports**

Sales of technical products for vessels in shops and/or warehouses – <b>0%</b>	Electrical services – <b>0%</b>
Hull repair – <b>0%</b>	Supervisor – <b>0%</b>

Manufacture and repair of sails and awnings – 0%	Dry dock/Slipway – 5%
Sales of technical products for vessels (custom) – 0%	Electronic services – 3.7%
Upholstery services – 0%	Warehouse – 0%
Rope fitting and adjustment services – 0%	Plasticization of vessels / glass plastic – 0%
Marine engine service – 84,6%	Ship joinery – 0%

Table 7 shows that the total size and relatively limited area on which the ports are built are fairly constraining considerations, confirming what was previously said that ports in the county only offer very minimal services due to space constraints. Port areas are limited in ports managed by the Dubrovnik-Neretva County port authority, resulting in certain services being supplied outside of the port area, such as in the adjacent districts or, if possible, at dock. Vessel engine services, for example, are performed 'on-call,' which means they don't have a dedicated place like a shop and instead appear in the port.

It can be concluded that the overall size and relatively small area on which the ports are built are fairly constrictive in terms of the ports' developmental possibilities; thus, port refurbishment and expansion could be a solution, and the authors learned from discussions with port authorities that this is not being considered due to their nature as ports for local traffic. The aforementioned services (not all of which are available in all ports) are available in approximately 22 of the 26 ports. Percentages are discouraging, but they are not surprising given that most of these ports are improvised and were built to provide a haven for vessels while not spending too much money on anything other than basic needs.

**Technical diver services** include underwater maintenance and repair work on ships, yachts, and boats, as well as underwater inspections and inspections, towing, lifting ships and structures from the seabed, drilling, and cutting. **73%** of ports provide technical diver services since it is at request (same as engine repairs), there's a consensus that these services could be provided in more ports in the event of an emergency. Furthermore, there are no technical divers on-site; they are provided by third-party vendors.

**Fire protection** at the docks is **available only in some ports** – such as Gruž which has a water fighting system plus a water closet every 80m of the and ports under Korčula county port authority which have fire extinguishers and the berth.



100% of ports provide **radio service** to boaters, however, only 30,8% of ports that do provide this service do so 24 hours a day, seven days a week.

### 3.7.2. Environmental aspect

Tourists frequently consider nature when choosing a destination for their next sailing adventure or holiday. Tourists frequently detect the state of the environment by comparing it to previous sites they've visited. As a result, they must assess the state of the water, as well as the cleanliness and comfort of beaches, bays, harbours, and other natural features. Natural resources are undeniably important to the growth of small ports and serve as the foundation of their attraction, but there are both positive and negative elements to this sort of tourism as it grows in popularity.

According to boaters, the most important environmental impacts of small ports are fuel and other types of rubbish, such as litter, sewage tank leakages, poisonous antifouling coatings, and grey waters from boats. Despite rules and regulations protecting the environment and banning such actions, there are presently few facilities to empty septic tanks, or tanks are out of operation, increasing the likelihood of boaters emptying tanks into the sea. Ports recognized such trends and launched a quest to improve their offer and overall company as a result of rising environmental consciousness and the proliferation of eco-friendly initiatives. Single-use goods should be used less frequently in ports. One of the concepts suggests that ports could use recyclable and environmentally friendly products and even provide suggestions on how boaters could be more environmentally conscious.

The overall ecological impact could be reduced in a variety of ways:

- Establishing or improving a waste management system through the provision of infrastructure that would engage (emptying containers regularly, locating them near ports, and enabling waste sorting),
- Improving the upkeep of shore gas and pump-out stations (checking and repairing them on a regular basis, providing proper instructions on how to use them, and ensuring a sufficient number of safe and easy-to-use shore pump-out stations),
- Increasing boaters' environmental awareness
- Improving the marking of visitors' berths to make them easier to find for boaters; and
- Incentivizing boaters to use such facilities with lower fees.

Table 8 portrays the situation of the environment in the country ports of Dubrovnik and Neretva. Desalination plants and wastewater monitoring systems are not available, as they are in the majority of small Croatian ports. Gruž is the only port having an air quality system because large passenger vessels frequently call there and it is a MARPOL requirement. Because there is no environmental management system certification, there is no environmental education and activities for staff, which is something ports may focus on as more and more boaters visiting ports become conscious of the environmental impact of boating.

**Table 7: Statistical representation of ecological aspect in ports and**

Presence of a port wastewater monitoring system – n/a	Presence of desalination plants – 0%
Presence of a sewage treatment plant in the port – 0%	Presence of water purification plant inside the shipyard – 0%
Presence of ecological tanks for collecting waste oils and wastewater – 100%	Level of environmental education and activities promoted for users and staff – 0%
Presence of a proper battery disposal service – 3.8%	Level of promotion of sustainable modes of transport – 15%
Existence of Environmental Management System Certification (renewable annually) – 0%	Fuel distribution centres/Pump out stations – 6%

There is a very low level of **promotion of sustainable modes of transportation** present at only **20%** of the ports, which would not exist if the European Union's greener agenda and state commitment to running greener transportation following European policies did not exist.

It is encouraging to see that all ports (**100%**) have **ecological tanks for the collection of waste oils and oily waters**; and only Vela Luka ports offers used batteries collection however, there is one area that can be improved, and that is the availability of waste separation systems in only 50% of ports.

### 3.7.3. Touristic services

The size and peculiarities of the islands, their relative position, close proximity to the mainland, the shoreline, and the completeness of ecosystems combine to make the coastal area of the Dubrovnik-Neretva county unique and appropriate for maritime tourism as an integral aspect. Climate, oceanography, civilizational, abundance of historical, and environmental factors, as well as a variety of other significant features, including land, all contribute to these traits. All of these characteristics



contribute to the area's symbiotic relationship between minor ports and tourism. Nautical tourism is a multifunctional tourist activity with a strong maritime component that is included in nautical tourism as a tourist phenomenon, with sea vessels and ports serving as their havens.

Touristic services are defined as an overall offer to port users that goes beyond basic needs. Tourist services encompass a wide range of fields in which customers seek individual satisfaction, which affects the overall perception of the ports.

Welcoming tourists in their native language conveys a sense of respect and hospitality. Dalmatia region has long been influenced by the Italian (Venetian) culture visible in the art, culture and architecture, resulting in an above-average presence of Italian-speaking locals.

Employees of Dubrovnik-Neretva county welcome tourists to their ports in fluent English in all ports (100%).

The presence of port facilities for persons with limited mobility is a big benefit in general since it allows people to visit ports and harbours, which promotes social inclusion. Unfortunately, port visitors have access to such infrastructure only in the port of Gruž and again due to important international terminal presence, therefore they must rely on the geographic arrangement of the ports.

While this offer was not included in this study, it is one of the aspects that should be investigated to round out the tourism offer.

Sporting fields and facilities also contribute significantly to the enhancement of the tourist offer. Dubrovnik-Neretva county cities are fairly developed in terms of cultural events and infrastructure needs thanks to high dependency on tourism, especially during summer when most visitors visit ports in the county however some ports are still slightly "under-equipped." By no means does this imply that those ports are struggling to find customers; on the contrary, more and more people are fleeing from crowded areas to areas such as those that are a little more secluded such as Mljet or secluded parts of the island offering more peace and tranquillity.

In the category of **sports activities** (windsurfing, sports clubs, sailing schools, and diving schools), 3 of the 26 ports in the county offer such activities, implying that only 11,5% of ports have additional content related to sea-related sports activities. Other sports and wellness facilities are distributed similarly.

With the ever-increasing demand for various types of SPA and beauty centres, wellness facilities are an essential accessory in today's world. 96% of Dubrovnik-Neretva county ports have at least one type of wellness facility (SPA centre, health resort, medical centre, beauty centre, hair salon, or barbershop) in their immediate vicinity. Same as sports facilities, they are usually located at town and or hotels in the port vicinity, not in the ports themselves as ports are very restricted.

**Table 8: Average distance (Dubrovnik-Neretva County ports – transport and facilities)**

Airport	105 km
Bus station	1 km
Highway	80,5 km
Police station / Fire department	10,3 km
Hospital / Quick medical service	9,3 km

Mobility is high on the agendas of government institutions, particularly in tourist-oriented ports that provide cheap and quick mobility during the tourist-heavy summer months

#### 4. SWOT analysis on small ports phenomenon

The growth of small ports and maritime tourism in the Dubrovnik-Neretva county was studied using a research tool known as SWOT analysis. SWOT analysis, also known as situational analysis, is an intuitive method of examining and evaluating the environment's internal (strengths and weaknesses) and external (opportunities and threats) factors in the context of observing the state and potential development of a specific phenomenon, in this case, the small port phenomenon.

**Table 10: Dubrovnik-Neretva County ports SWOT analysis**

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Mediterranean mild climate</li> <li>• Rich history and culture (locations under UNESCO protection)</li> <li>• Proximity to emissive markets</li> <li>• Protected nature</li> <li>• Accessibility (car, plane)</li> <li>• Great transport infrastructure and connections by a variety of transport modes</li> <li>• Good tourism infrastructure (hotels, hostels, camps, apartments)</li> <li>• Overall safe location (low crime rates)</li> <li>• Foreign languages are widely spoken</li> <li>• Mobility</li> <li>• Good tourist offer (beach, historical and active holidays offer)</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Small ports resulting in space constraints</li> <li>• Insufficient berths availability</li> <li>• Bureaucracy</li> <li>• Non-existing standardisation of nautical ports</li> <li>• Tourism season seasonality results in crowded locations</li> <li>• Additional services offered to nautical tourists</li> <li>• Level of expertise in ports</li> <li>• Missing</li> <li>• Missing environmental standards across the country (waste management etc)</li> <li>• Missing a tourism strategy that would round out the offer (nautical tourists)</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Active tourism potential still unused</li> <li>• Hospitality staff education can still be improved</li> <li>• New markets potential</li> <li>• Foreign investments could lead to improvement in standards</li> <li>• Using the film industry potential (promotion)</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Insufficient funding for investments</li> <li>• Low ports standard</li> <li>• Mass tourism</li> <li>• Ecological disasters (pollutions)</li> <li>• Global epidemics</li> <li>• Paving the coast, which detracts from its natural attractiveness</li> <li>• Lack of regulations for monitoring and protecting the coast</li> </ul>

<ul style="list-style-type: none"> <li>• Possibility to extend the season to the yearlong instead of summer or 4-5 months max</li> <li>• Extending the offer of services to the boaters</li> <li>• Further improvement of transport infrastructure (train fx)</li> </ul>	<ul style="list-style-type: none"> <li>• General lack of regulations</li> <li>• No clear plan for upcoming mid-long term period for smaller ports</li> </ul>
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The SWOT analysis is a matrix of questions and answers about factors that could affect the overall performance of small ports. This type of analysis is carried out in collaboration with a group of nautical tourism experts and managers, as well as coordinators and moderators. SWOT analysis is a tool that helps detect and identify key development factors, development potentials, and development constraints. As such, it is a critical step from analyzing the current situation to considering the future, desired and possible, and determining the development vision, strategic goals, measures, and projects.

Nautical tourism ports continue to fall short of the required level of structure and quality of offer that boaters expect, especially when compared to the natural ambient characteristics and benefits that Croatia and Dubrovnik-Neretva County are endowed with. Due to a lack of additional content, ranging from port accommodations and sports fields to restaurants, nautical equipment shops, supermarkets, boat services, cranes, slipways, and so on, the ports' income is significantly lower than what is possible, and their structure is unfavourable.

The most significant advantages are favourable natural characteristics, such as a high degree of indentation of the coast, connectivity and complementarity of the island and coastal belt, existing tourist infrastructure and capacities from other activities, and the benefits of locations for the construction of various types of tourist ports and other nautical - tourist capacities. However, in addition to the benefits mentioned above, nautical tourism has some drawbacks that must be addressed to compete successfully in the global nautical market.

Some negative factors, respectively the shortcomings of nautical tourism and the limiting factors of its development are seasonal character activities in nautical tourism, occupation of the sea and the coast, usurpation of the coast, sea pollution with oil and its derivatives, bacteriological pollution of the sea by wastewater and substances, the devastation of biological resources of the sea, pollution of the sea with various wastes and impurities and the destruction of fish and water resources.

Seasonal character activities in nautical tourism, occupation of the sea and the coast, usurpation of the coast, sea pollution with oil and its derivatives, pollution of the sea by wastewater and substances, the devastation of biological resources of the sea, pollution of the sea with various wastes and impurities, and destruction of fish and water resources are the negative factors, respectively the shortcomings of nautical tourism and the limiting factors of its development.

## 5. Summary and conclusions

The purpose of this regional report was to provide an overview of the current state of the Dubrovnik-Neretva county ports Port Authorities and the port areas under their management, based on data collected through the project partner IUAV's questionnaire and information obtained through interviews with county port authorities.

Despite that Dubrovnik-Neretva County ports have one of the strongest opportunities for success due to their favourable Mediterranean location and proximity to neighbouring nations with similar perspectives on the sector, even development is out of reach. Because some of the berths are improvised with handmade equipment, the bulk of the small Adriatic ports are categorized as "satellite ports," which implies they serve as a temporary refuge. Some of them were built illegally and unnaturally extended, resulting in a lack of structural cohesion between berthing piers.

1. As noted throughout the paper, space limits and centralization appear to be the most significant hurdle that will not be addressed very soon, as the majority of content and tourism offerings are concentrated in larger cities (and ports). When larger ports reach overcapacity levels, the natural flow of development must be in the form of an outflow. This was confirmed in the years leading up to the COVID-19 epidemic. When ports reached their peak docking and passenger numbers, every accessible space that resembled a berth began to attract nautical clientele.