

MASTER PLAN

FOR DEVELOPMENT OF PORTS OPEN TO PUBLIC
TRAFFIC UNDER JURISDICTION OF THE COUNTY
PORTH AUTHORITY OF ZADAR

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INTRODUCTION

The master plan implies a comprehensive plan created on the basis of the broadest insight into the problem with the aim of providing general guidelines based on which it is possible to optimize the analyzed thematic area in the future, usually in the medium term (up to 10 years). This master plan includes an analysis of the development of ports open to public traffic in Zadar County with a special focus on selected 20 port areas of ports of county and local importance - 8 ports open to public traffic of county importance - Preko, Biograd n/M, Tkon, Brbinj/Lučina, Pag, Zaglav, Fortica, Silba/Žalić, and 12 ports open to public traffic of local importance - Sali, Molat/Lučina, Božava, Maestral, Kukljica, Draženica, Vinjerac, Jazine, Petrčane, Bibinje/Jaz, Foša and Novigrad.

Starting from the legal definition of the term "Port Authority" - a non-profit legal entity established on the basis of the Law on Maritime Property and Sea Ports (Official Gazette 158/03, 100/04, 141/06, 38/09, 123/11), and the Decision on the Establishment of the Port administration (Official Gazette of Zadar County 6/98, 15/03, 14/04, 11/05, 12/05, 9/07, 6/11, 16/15), it follows that its establishment was primarily achieved for the management, maintenance, the construction and use of ports of county and local importance (in the context of this master plan in the area of Zadar County), and in accordance with the regulation on the classification of ports open to public traffic in the area of Zadar County issued by the minister responsible for maritime affairs. This fact is important to point out in order to emphasize the role of the County Port Authority in the analysis of its further development, where the primary goal is not to generate as much revenue as possible, but to maintain a port of county and local importance when there is no direct economic interest in it, and all with the aim encouraging the further development of not only port but also local (in the case of Zadar County, very often island) communities, which is a frequent occurrence in Zadar County due to the specificity of island areas.

Next, starting from the fact that the establishment of the County Port Authority is based on legal acts at the state level (it is important to emphasize that with the accession of the Republic of Croatia to the European Union, its strategic documents were also adapted to the strategic goals of the European Union), the importance and the need to create a master plan for the development of ports open to public traffic areas Zadar County finds its foothold in the following strategic documents of the Republic of Croatia, which at the strategic level determine the needs and guidelines of development:

- The transport development strategy of the Republic of Croatia for the period from 2014 to 2030
- The transport development strategy of the Republic of Croatia for the period from 2017 to 2030
- The National Development Strategy of the Republic of Croatia until 2030
- National development plan for ports open to public traffic of county and local importance (draft final report)
- Zadar County Development Plan 2021-2027 (draft text)

On the basis of the aforementioned strategic documents, the importance and justified need of creating a master plan for the development of ports open to public traffic in the Zadar County area is evident.

The structure and content of this master plan, in addition to this introductory and concluding chapter, and the chapter with the list of literature used, are made up of five more chapters in order - *"Legal framework and strategic documents"*, *"Analysis and evaluation of the state of ports open to public traffic of county and local importance"*, *"Proposal of criteria for the classification of ports of county and local significance (proposal of a new classification)"*, *"Analysis of spatial planning documentation of ports of county and local significance"*, *"Development of development criteria and guidelines for planning"* and *"Proposal of the development concept of ports of county and local significance including the proposal of measures until 2030"*.

As already mentioned in the second chapter *"Legal framework and strategic documents"*, an overview was presented of all legal acts and strategic documents that in any way have an impact on the development of (selected) ports open to public traffic in Zadar County.

As a basis for carrying out the analysis of future development possibilities, it was primarily necessary to make an analysis of the current state of the selected port areas, which is presented in the third chapter *"Analysis and assessment of the state of ports open to public traffic of county and local importance"*. As already mentioned, this chapter provides an overview of the current situation, which represents the basis of the analysis of ports open to public traffic in Zadar County with a special focus on selected 20 port areas of ports of county and local importance - 8 ports open to public traffic of county importance - Preko, Biograd n/M, Tkon, Brbinj/Lučina, Pag, Zaglav, Fortica, Silba/Žalić, and 12 ports open to public traffic of local importance - Sali, Molat/Lučina, Božava, Maestral, Kukljica, Draženica, Vinjerac, Jazine, Petržane, Bibinje/Jaz, Foša and Novigrad. For each of the mentioned ports, the following elements were analyzed - the geographical position of the port and the port area, the area of the port area and its relation to the total area of other port areas, the content and activities that are available and carried out in the port, the technical and technological features of the operational shores and moorings places, mooring capacity for different types of vessels, equipped with equipment that enables the safe stay of vessels in the port, existing traffic and potential future demand, navigational and meteorological-oceanological conditions of the location of the port and associated anchorages.

Based on the analysis of the current state of port areas in the third chapter, and for the purpose of considering the needs and possibilities of their future development, it was necessary to take into consideration the existing/valid criteria that determine the way of categorizing port areas. Considering that the mentioned criteria have not been revised since their adoption in 2003, and in accordance with the needs of future development, the need for their revision is indicated, the fourth chapter *"Proposal of criteria for the classification of ports of county and local importance (proposal of a new classification)"* provides an overview of the new proposal for their classification.

The fifth chapter *"Analysis of the spatial-planning documentation of ports of county and local importance"* follows on from the previous chapters and provides an overview of the current state of selected ports open to public traffic in the Zadar area from the point of view of the spatial-planning situation (spatial and legislative), as a basis for further analysis of the possibility of their development.

Based on the analysis carried out in the previous chapters, the sixth chapter "*Elaboration of development criteria and planning guidelines*" presents models made using the multi-criteria decision-making method, which show the possibilities (direction) of development for each of the analyzed port areas based on the existing situation, spatial planning possibilities, and set criteria of future development.

The seventh chapter "*Proposal of the port development concept of county and local significance, including the proposal of measures until 2030*" based on the analyses carried out in all previous chapters, provides a summary overview of the development possibilities for each of the analyzed port areas.

Based on all the analyses carried out, below is the complete content of the document entitled "*Master Plan for the Development of Ports Open to Public Traffic in Zadar County*" as a basis for determining the future development of 20 selected port areas, i.e., ports of county and local importance open to public traffic in the area Zadar County, i.e., under the jurisdiction of the County Port Administration Zadar.

LEGAL FRAMEWORK AND STRATEGIC DOCUMENTS

This chapter describes and analyses the legal sources and strategic documents that directly or indirectly govern the entities and the way of management, as well as the basic rights and obligations in ports open to public traffic of county and local importance, and which apply to ports open to public traffic of county and of local importance, which certainly includes ports open to public transport of county and local importance in the area of Zadar County.

LEGAL FRAMEWORK

For the need to create a Masterplan for the development of ports open to public traffic of county and local importance in Zadar County, the following legal sources were analyzed and used:

- Maritime Code, Official Gazette (hereinafter: NN), no. 181/04, 76/07, 146/08, 61/11, 56/13, 26/15 and 17/19.
- Law on maritime property and sea ports, NN, no. 158/03, 100/04, 141/06, 38/09, 123/11 – Decision USRH, NN, no. 56/16 and 98/19.
- Act on transportation in regular and occasional coastal maritime traffic, NN, no. 19/22.
- Law on Concessions, NN, no. 69/17 and 107/20.
- Law on port authorities, NN, no. 118/18.
- Law on the implementation of Regulation (EU) 2017/352 of the European Parliament and the Council of February 15, 2017 on the establishment of a framework for the provision of port services and common rules on financial transparency of ports, NN, no. 66/19.
- Regulation on the procedure for determining the boundary of maritime property, NN, no. 8/04 and 82/05.
- Regulation on the procedure for granting a concession on maritime property, NN, no. 23/04, 101/04, 39/06, 63/08, 125/10, 102/11, 83/12 and 10/17.
- Decision on the establishment and appointment of the Expert Body for evaluation of offers for concessions on the maritime domain, NN, no. 44/16, 95/19 and 29/21.
- Decision on giving consent to the Decision of the County Assembly of Zadar County on amendments to the Decision on the establishment of the Port Authority for ports of county and local importance, NN, no. 78/21.
- Rulebook on registration and marking of maritime property, NN, no. 29/05.
- Rulebook on the criteria for determining the purpose of a particular part of the port open to public traffic of county and local importance, the method of payment for connections, terms of use, and determining the maximum amount of compensation and distribution of income, NN, no. 94/07, 79/08, 114/12 and 47/13.
- Rulebook on criteria for extending the duration of the concession NN, no. 112/07.
- Ordinance on the conditions and manner of maintaining order in ports and other parts of internal sea waters and territorial sea of the Republic of Croatia, NN, no. 72/21.
- Order on the classification of ports open to public traffic in the area of Zadar County, NN, no. 7/21 and 24/21.
- Law on Sea Fisheries
- Regulation on the classification of ports open to public traffic and ports of special purpose, NN, no. 110/04 and 82/07.
- Decree on conditions that must be met by ports, NN, no. 110/04.

- Regulation on the procedure for determining the boundary of maritime property, NN, no. 8/04 and 82/05.
- Regulation on environmental impact assessment, NN, no. 61/14.
- Regulation on standards and conditions that must be met by border crossings for effective and safe border control, NN, no. 57/14.
- Ordinance on the conditions and manner of maintaining order in ports and other parts of internal sea waters and the territorial sea of the Republic of Croatia, NN, no. 72/21.
- Decision on the list of landing places for fishing vessels operating commercial fishing at sea, NN, no. 64/09 and 66/09.
- Decision on determining the port area in ports open to public traffic of county and local significance.
- Decision on giving consent to the Decision on determining the port area in ports open to public traffic of county and local significance.

STRATEGIC DOCUMENTS

Among the strategic documents for port development, the following were adopted:

- Transport Development Strategy of the Republic of Croatia (2017 – 2030);
- Transport Development Strategy of the Republic of Croatia (2014 – 2030); (NN131/14);
- National Development Strategy of the Republic of Croatia until 2030 (NN, no. 3/21);
- National plan for the development of ports of special (international) economic interest for the Republic of Croatia (state ports);
- National plan for the development of ports open to public traffic from the county and of local importance - draft of the final report.

The Zadar County Development Plan was also accepted at the level of Zadar County 2021 – 2027

For the purposes of creating the Master Plan for the development of ports open to public traffic of county and local significance in the area of Zadar County, the following strategic documents were analyzed:

- Transport Development Strategy of the Republic of Croatia (2017 – 2030);
- Transport Development Strategy of the Republic of Croatia (2014 – 2030); (NN131/14);
- National Development Strategy of the Republic of Croatia until 2030 (NN, no. 3/21);
- National plan for the development of ports open to public traffic from the county and of local importance – draft of the final report;
- Zadar County Development Plan 2021-2027.

ANALYSIS AND ASSESSMENT OF THE STATE OF PORTS OPEN TO PUBLIC TRAFFIC OF COUNTY AND LOCAL IMPORTANCE

In this chapter, an overview of the current situation is presented as a basis for the analysis of ports open to public traffic in Zadar County, with a special focus on selected 20 port areas of ports of county and local significance - 8 ports open to public traffic of county significance - Preko, Biograd n/M, Tkon, Brbinj/Lučina, Pag, Zaglav, Fortica, Silba/Žalić, and 12 ports open to public traffic of local importance - Sali, Molat/Lučina, Božava, Maestral, Kukljica, Draženica, Vinjerac, Jazine, Petrčane, Bibinje/Jaz, Foša and Novigrad. For each of the mentioned ports, the following elements were analyzed - the geographical position of the port and the port area, the area of the port area and its relation to the total area of other port areas, the content and activities that are available and carried out in the port, the technical and technological features of the operational shores and moorings places, mooring capacity for different types of vessels, equipped with equipment that enables the safe stay of vessels in the port, existing traffic and potential future demand, navigational and meteorological- oceanological conditions of the location of the port and associated anchorages.

PROPOSAL OF CRITERIA FOR THE CLASSIFICATION OF PORTS OF COUNTY AND LOCAL SIGNIFICANCE (PROPOSAL OF NEW CLASSIFICATION)

For the purpose of analyzing the existing criteria and proposing new criteria for the classification of ports the following regulations and strategic documents of county and local importance were studied:

- Maritime Code, NN no. 181/04, 76/07, 146/08, 61/11, 56/13, 26/15 and 17/19;
- Law on maritime property and seaports, NN no. 158/03, 100/04, 141/06, 38/09, 123/11, 56/16 and 98/19;
- Regulation on classification of ports open to public traffic and special purpose ports, NN no. 110/04, 82/07;
- Order on classification of ports open to public traffic in Zadar County, NN no. 7/2021;
- Regulation on conditions that must be met by ports, NN 110/04;
- National plan for the development of ports open to public traffic from the county and of local importance, 2016;
- Strategic environmental impact study of the National Plan for the Development of Ports Open to Public Traffic of County and Local Significance, 2016;
- Transport development strategy of the Republic of Croatia for the period from 2017 to 2030;
- Law on islands, NN no. 116/18, 73/20, 70/20;
- National Island Development Plan 2021-2027.

EXISTING CRITERIA FOR THE CLASSIFICATION OF PORTS OPEN TO PUBLIC TRAFFIC

The classification of ports is regulated by the Law on Maritime Property and Sea Ports, which regulates the legal status of maritime property, determination of its boundaries, management and protection of maritime property, use and utilization, classification of seaports, port area, establishment of port authorities, port activities and their performance, construction and use of port superstructure and substructure, and important questions about order in seaports.

The Law on Maritime Property and Sea Ports is a fundamental legal act based on which ports are divided into ports open to public traffic and ports for special purposes, according to purpose. It is important to point out that ports open to public traffic and ports open for special purposes can be open to international and domestic traffic.

According to the size and importance for the Republic of Croatia, ports open to public traffic are divided into:

- ports of special (international) economic interest for the Republic of Croatia,
- ports of county importance and
- ports of local importance

The criteria for the classification of ports open to public traffic are determined by the Government of the Republic Croatia. This takes into account:

- total traffic of the port in the ten-year period and its characteristics,
- operational capacity of the port,
- state of the port substructure and superstructure,
- ability to organize and supply services,
- maintenance and repair of vessels and the port,
- quality and importance of transport links with the hinterland,
- economic possibilities of further development of the port, etc.

Based on the decision on criteria for the classification of ports open to public traffic, the minister issues a regulation on the classification of ports.

The port area for ports open to public traffic of county and local significance in its territory is determined by the County Assembly. The County Assembly determines the port area in accordance with the spatial plan and with the consent of the Government of the Republic of Croatia. The port area of ports open to public traffic of county and local significance includes the area intended for:

- performance of liner shipping,
- communal berth,
- nautical berth,
- fishing mooring
- moorings

The Government of the Republic of Croatia has with the “Decree of the classification of ports open to the public traffic and special purpose ports” defined the following criteria for classifying ports open to public traffic into ports of county importance:

- Average traffic of more than 50,000 tons of cargo per year in the period from 1998 to 2003, that is, average passenger traffic of more than 100,000 passengers per year in the period of 1998 to 2003 for a port in which passenger traffic is carried out exclusively;
- Adequate road connection with the hinterland;
- Installed port capacities for cargo traffic of 50,000 tons, i.e., piers and shores for receiving ships up to 80 m long and up to 4 m draft;
- At least three lines per month in domestic traffic for the port in which it operates exclusively carries out passenger traffic.

The criteria for the classification of ports open to public traffic into ports of local importance is the average traffic of up to 50,000 tons of cargo per year in the period 1998-2003, i.e., the average passenger traffic of up to 100,000 passengers per year in the period 1998-2003 for the port in which exclusively carries out passenger traffic.

From the existing criteria for classifying ports open to public traffic into ports of county or local significance, it is clear that these are smaller ports with less passenger or cargo traffic and fewer services available to users.

Also, it was determined that local ports are all ports that are for public use and only have a built-up coast for safe mooring of vessels.

It is important to point out that, when classifying, every port open to public traffic must meet all the criteria prescribed for the corresponding port class. Considering the predominant traffic, ports open to public traffic are divided into passenger ports and cargo ports. When a port meets the conditions for classification in a particular class, it is classified in the class for which the predominant traffic meets the criteria.

Currently, in the Republic of Croatia, there are a total of 412 ports open for public transport of county and local importance. Of these, a total of 64 ports are classified as ports of county importance, while 348 ports are classified as ports of local importance. The number of ports that are distributed within each county is shown in Table 73.

Table 73.: Ports open for public transport of county and local significance in the Republic of Croatia

County	Ports of local importance	Ports of county importance
Split-Dalmatia	6	51
Zadar	8	105
Istria	8	32
Primorsko-Goranska	27	74
Ličko-Senjska	8	12
Dubrovnik Neretva	7	74

CLASSIFICATION OF PORTS OPEN TO PUBLIC TRAFFIC IN ZADAR COUNTY

Based on Article 44, Paragraph 1 of the Law on Maritime Property and Sea Ports (Official Gazette 158/03, 100/04, 141/06, 38/09, 123/11 – Decision of the Constitutional Court of the Republic of Croatia, 56/16 and 98/19), and in connection with the Decree on the Classification of Ports Open to Public Traffic and Special Purpose Ports (Official Gazette 110/04 and 82/07), the Minister of the Sea, Transport and Infrastructure issues an Order on the Classification of Ports Open to Public Traffic.

According to the order on classification of ports open to public traffic in Zadar County (Official Gazette 7/2021), a total of eight ports in Zadar County are classified as ports of county importance, while a total of 104 ports are classified as ports of local importance.

Eight ports that are open to public traffic by the Order on Classification of Ports in the area of Zadar County (Official Gazette 7/2021, 21.1.2021) classified into ports of county significance are:

1. Port of Biograd – passenger port,
2. Port of Brbinj Lučina – passenger port,
3. Port of Fortica – passenger port,
4. Port of Pag – passenger port,
5. Port Preko - passenger port,
6. Port Silba Žalić - passenger port,
7. Port Tkon - passenger port and
8. Port Zaglav - passenger port.

Based on the analysis carried out in Chapter 3, it can be concluded that the majority of local ports in Zadar County are in the function of communal connections. This means that they are mostly intended for the mooring of boats of local residents, i.e. for the permanent mooring of a vessel whose owner resides in the area of the local self-government unit or the vessel resides predominantly in that area and is registered in the register of ships of the competent harbormasters' office or the register of boats of the competent of the port master's office or branch and for the use of which a permanent connection contract is concluded with the port administration and where, as a rule, economic activities are not carried out.

Part of the port, in addition to its communal features, also has a nautical part intended for mooring nautical vessels and the operational part intended for the mooring of vessels in public maritime transport, vessels for the occasional transport of passengers, cargo vessels and other vessels and fishing vessels when they carry out loading and unloading activities.

As a rule, we are talking about ports that have a more modest port infrastructure, a lower level of mooring equipment and additional facilities.

Also, based on the analysis made in Chapter 3, it can be concluded that these are ports that provide services that have the function of receiving vessels on regular lines, provide mooring services for nautical vessels and fishing boats, and have a communal character.

SHORTCOMINGS OF THE EXISTING CRITERIA FOR THE CLASSIFICATION OF PORTS OPEN TO PUBLIC TRAFFIC

The existing criteria for the classification of ports specified in the “Regulation on the classification of ports open to public traffic and special purpose ports” refer to the amount of traffic and frequency of shipping lines, road and rail connections with the hinterland, and installed port capacities. From the presentation of the existing criteria, it is clear that all the mentioned criteria can be classified as criteria that belong to the category of traffic-technological criteria. None of the criteria listed in the Regulation belongs to the category of socio-economic criteria.

The existing criteria for the classification of ports open to public traffic into ports of county importance are considered rigid and imprecise, and cannot be a credible element for evaluating ports open to public traffic of significance for a specific county and regional development.

This primarily refers to the fact that the existing criteria do not cover the geographical, traffic, economic and social specificities of each county, i.e., the economic interests and needs of the local population within a certain county are not covered. When it comes to economic interests and the interests of the local population, it is important to point out that the local population represents the most important stakeholders in the development of ports of county and local significance within each individual county. These are regular users of port services, on whom the development of the port can have a positive as well as a negative impact.

The above was established in the National Development Plan for Ports Open to Public Traffic of County and Local Significance (2016) as follows:

- For the criterion according to which ports open to public traffic are classified as ports of county importance, and which refers to an average passenger traffic of 100,000 passengers per year, the following is stated: they prefer those ports with higher passenger traffic. Therefore, those ports that provide shipping services to several larger islands in Croatia should have greater significance than those ports that serve to connect smaller islands where there is less traffic, but indisputably much more important for ensuring the mobility of the island population there and preserving the indigenous values of the island".
- For the criterion according to which the ports are open to public traffic classified into ports of county importance, and which refers to the average cargo traffic of 50,000 tons of cargo per year, the following was stated: "analyzing the criterion of the minimum amount of cargo, it is not clear why the port in which transshipment, for example, 60,000 tons of cement, was more important than a port where 10,000 tons of fish are transhipped and which serves the development of fisheries and mariculture".

- For the criterion according to which ports open to public traffic are classified into ports of county significance, and which refers to adequate road connectivity, the following is stated: the term "adequate road connectivity with the hinterland" is not measurable either in a qualitative or quantitative sense.
- For the criterion according to which ports are open to public traffic classified into ports of county importance, and which refers to the installed port capacities for cargo traffic of 50,000 tons, i.e., piers and shores for receiving ships up to 80 m in length and 4 m draft, the following is stated: "due to imprecise wording, the criterion is simply not possible to interpret, so it is therefore inapplicable".

In the rest of the text, the problem arising from the criteria related to the average traffic of more than 50,000 tons of cargo per year and the average traffic of passengers of more than 100,000 passengers per year is explained in more detail.

In the National Island Development Plan, it was pointed out that the Croatian island area covers an area of 3,259.57 km², home to 3.1% of the total population of Republic of Croatia. The population density of the Croatian islands is 40.73 people/km², which is almost half the population density in the Republic of Croatia (75.7 people/km²). 30% of the total island population lives in Primorje - Gorski Kotar County, 27% in Split-Dalmatia County, 20% in Dubrovnik-Neretva County, 5% in Šibenik - Knin County, and 3% in Lika - Senj County.

There are as many as 17 inhabited islands in Zadar County. Unfortunately, in the total number of the island population of the Republic of Croatia, Zadar County participates with only 16%. The islands in Zadar County, but also in other counties, are characterized by long-term negative demographic and economic trends. In the last few decades, the emigration of inhabitants from the island has been growing significantly, so the main task of the Government of the Republic of Croatia is to stop the depopulation and emigration of inhabitants from the island. For this reason, the Government of the Republic of Croatia presented a series of incentives measure for:

- development of the economy on the islands,
- opening and adaptation of schools and kindergartens,
- providing favorable loans for the economy and tourism development,
- improving medical care,
- providing social care for the elderly and infirm living on the islands, etc.

One of the most important preconditions for stopping the depopulation of the population on the islands are their interconnection and connection with the mainland, which is especially pronounced on offshore islands.

Precisely by better and more regular connection of the islands, it is possible to ensure:

- greater mobility of the population,
- better availability of health care and other public services and
- more fluid exchange of goods and services.

In the Transport Development Strategy of the Republic of Croatia (2017 – 2030), the necessity of higher quality and more frequent connections between the mainland and the islands is highlighted, and public transport plays a key role in coastal line traffic. Precisely the development of county ones and local ports is the most important factor that ensures the sustainable development of the island. In the same document, it was pointed out that ports must be adapted and upgraded for the needs of regular passenger traffic, and the main goal of the Strategy is the development of ports of county and local importance, i.e. their upgrading and reconstruction for the needs of local residents and tourists. This means that the areas of certain ports must be adapted to receive coastal liner passenger ships and/or to receive smaller tourist ships and nautical vessels.

The same was stated in the National Plan for the Development of the Islands, in which it was pointed out that in order to improve the traffic accessibility of the islands, it is crucial to improve the port infrastructure and the equipment of the ports on the islands, primarily for the reception of liner passenger ships, but also other types of ships.

Given that there is a relatively large number of ports, priority should be given to those ports that will enable regular maintenance of ship connections and better and safer connections between the mainland and the island and between the islands.

It is important to point out that greater mobility of the population, better availability of health care and other public services, more fluid exchange of goods and services lead to stronger development of the island's economy.

When it comes to economic sectors on the islands, tourism and catering play a key role. Although at a lower intensity compared to tourism and hospitality, the fishing sector also plays an important role, which participates to a significant extent in the export of food products of the Republic of Croatia and contributes to employment on the islands. It is agriculture and fishing that have always ensured the survival of the island's inhabitants. Agriculture and fishing activities employ 11% of the working population of the island. Small-scale coastal fishing plays an important role in the fisheries sector. Small coastal fishing includes 3,500 vessels, of which 80% located on the islands.

It is also important to highlight aquaculture, which has important potential on islands with a significant number and capacity of marine fish and shellfish farms, which make up the majority farms of the Republic of Croatia, and also offers the possibility of permanent employment of the island's population.

Based on the above, the criterion related to the minimum amount of cargo, i.e. the criterion according to which ports with a traffic of over 50,000 tons of cargo per year are classified as ports of county significance, becomes highly debatable.

In addition to the National Plan for the Development of Ports Open to Public Traffic of County and Local Significance, 2017-2030, the existing criteria are also criticized in the Master Plan for the Development of Ports Open to Public Traffic of County and Local Significance in the Republic of Croatia, where it is under final consideration stated that there is a need to initiate changes to the criteria from the Regulation on the classification of ports open to public traffic and ports of special purpose, because the existing criteria are based on transport and technological criteria without the possibility of respecting other criteria, i.e. economic, social and cultural criteria.

Article 8. of the Regulation on the Classification of Ports Open to Public Traffic and Special Purpose Ports prescribes that, during classification, every port open to public traffic must meet all criteria prescribed for the corresponding port class. It is this condition, i.e. the condition of cumulative compliance with all criteria from the existing Regulation, that was criticized in the National Plan for the Development of Ports Open to Public Traffic of Local and County Significance as a basic obstacle to the declaration of the majority of current local ports as ports of county significance as determined and planned by spatial plans some counties.

It was also pointed out that the classification of ports should not be based solely on the criteria from the Regulation, because in that case important principles of spatial planning, primarily the principle of polycentric development, were not respected.

PROPOSAL OF NEW CRITERIA FOR THE CLASSIFICATION OF PORTS OF COUNTY AND LOCAL SIGNIFICANCE

In the Law on Maritime Property and Sea Ports, Article 43, Paragraph 2, it is prescribed that the Government of the Republic of Croatia, when determining the criteria for classification port, take into account:

- the total traffic of each port in the past ten-year period and its features,
- operational capacity of the port,
- state of port substructure and superstructure,
- capacity of devices and services for supply,
- maintenance and repair of vessels and port;
- the quality and importance of transport links with the hinterland;
- spatial and economic possibilities of further development of the port, etc.

The Law leaves the possibility to add additional criteria as necessary.

In the National Plan for the Development of Ports Open to Public Traffic of County and Local Importance, the criteria according to which a classification of ports by importance can be proposed within one system, that is, within one county. The criteria are divided into two groups:

- Transport and technical functionality and
- Social acceptability and sustainability.

Within the mentioned two groups, the basic criteria to which they are associated are determined their sub-criteria. Basic criteria and their sub-criteria within the Transport group technical functionality are:

- Transport connectivity,
- Traffic capacities and traffic demand,
- Availability of basic port infrastructure,
- Quality of basic port infrastructure,
- Capacity of additional port facilities.

The sub-criteria within the Transport connectivity criteria are:

- The existence of a shipping line,
- Existence of a seaplane line,
- Existence of occasional passenger transport,
- Connection to the road transport network and
- Border crossing.

The sub-criteria within the criterion Traffic capacity and traffic demand are:

- Operational coast,
- Number of moorings – communal,
- Number of moorings – fishing,
- Number of moorings – nautical,
- Average number of daily vessel arrivals.

The sub-criteria within the criterion Availability of basic port infrastructure are:

- Availability of communal infrastructure (water, electricity, hydrants, lighting, ...),
- Existence of ro-ro connections,
- Accessibility of cruise ship tenders,
- Seaplane acceptance,
- Availability of a towing yard/crane for vessels,
- Availability of fuel supply to vessels.

The sub-criteria within the Quality of basic port infrastructure criteria are:

- Technical condition of mooring devices,
- Functional state of the infrastructure,
- Available space for the movement of people and vehicles along the coast,
- Quality of access for vehicles.

The sub-criteria within the criterion Capacity of additional port facilities are:

- Area of the port area (land part),
- Availability of space for technical maintenance of vessels,
- Availability of supply of basic foodstuffs,
- Availability of wireless Internet access.

The basic criteria and their sub-criteria within the Social Acceptability and Sustainability group are:

- Security, protection and technical equipment and
- Accommodation of the port.

Sub-criteria within the criterion Safety, protection and technical equipment:

- Protection of the vessel from the influence of the wind,
- Existence of a port's light,
- Depth of the sea,
- Availability of accepting waste from the vessel,
- Acceptance and disposal of oily water,
- Existence of port security service,
- Availability of emergency intervention services.

The sub-criteria within the Port accommodation criterion are:

- Proximity to urban and economic centers in the county (polycentrism),
- Attractiveness of geographical location,
- Proximity to a ship repair or service center for vessels,
- Port area within a protected urban area or under conservation protection.

The classification criteria on the basis of which the importance of a port can be determined within one system are shown in Table 74. The criteria and their sub-criteria are divided into two groups, i.e., criteria that belong to the group of traffic-technical criteria and criteria that belong to the group of social acceptability and sustainability.

Table 74.: Classification criteria listed in the National Development Plan for ports open to public traffic of county and local importance Classification

Classification criteria					
GROUP	BASIC CRITERIA	SUB-CRITERIA	R1	R2	
Traffic - technical functionality	Traffic connection	Existence of the ship line			
		The existence of a sea - air line			
		The existence of occasional passenger transport			
		Road connection transport network			
		border crossing			
	Traffic capacity i traffic demand	Operational coast			
		Number of comunal berths			
		number of fishing moorings			
		Number of nautical berths			
		Average number of daily the entry of the vessel			
	Availability of basic port infrastructure	Availability of utilities infrastructure (water, electricity, hydrants, lighting,...)			

Social acceptability and sustainability		Existence of ro-ro connections		
		Accessibility of ship tenders for cruises		
		Seaplane acceptance		
		Availability tugs/cranes for vessels		
		Availability of the vessel's fuel supply		
	Basic quality port infrastructure	Technical condition of devices for mooring		
		Functional condition infrastructure		
		Available space for movement people and vehicles along the coast		
		Quality of access for vehicles		
	Additional capacity port contents	The port area (land part)		
		Space availability for technical maintenance of vessels		
		Availability of basic supplies groceries		
		Availability of wireless access Internet		
	Security, protection, ecological equipment	Protection of vessels from the effects of waves		
The existence of a harbor light				
The depth of the sea				
Availability of waste acceptance s vessels				
Acceptance and treatment of the oily water				
Availability of basic supplies groceries				
Availability of wireless access Internet				
Ports geographic location	Proximity to urban economic centers in the county (polycentrism)			
	The attractiveness of geographical accommodation			
	Proximity to the ship-repair or service center for vessels			
	Port area within protected urban units or sub conservation protection			

Source: National plan for the development of ports open to public traffic of county and local significance (2017-2030)

Based on the criteria listed in Table 74, it is possible to propose a classification of ports by importance within one county, because different criteria were compared, which, depending on the circumstances and purpose of the classification, can be assigned different weighting coefficients, based on which it is possible to determine which port within the county has greater importance. In the same document, the classification of ports was proposed based on the current state and offer of port services within five standards:

- (A) very high service level ports,
- (B) ports of high service level,
- (C) medium level service ports,
- (D) ports of low service level,
- (R) ro-ro passenger ports (pier).

For each standard, criteria related to the functionality and technical quality of port services are defined, which are divided into five categories:

- Traffic capacity;
- Basic infrastructure;
- Infrastructure quality;
- Additional contents and
- Security and protection.

Categories of criteria related to functionality and technical quality services are shown in Table 75.

		Category	Requests
Requests by category		Traffic connections	Existence of shipping lines The existence of a seaplane line The existence of occasional passenger transport Connection to the road transport network Border crossing
		Traffic capacity and traffic demand	Operational coast Number of utility connections Number of tourist-nautical moorings Number of fishing moorings Average number of daily entries ships
		Basic port availability infrastructure	Surface area of the port water area Availability of communal infrastructure Seaplane acceptance Existence of ro-ro connections Accessibility for cruise ships and their tenders Availability of winches/cranes for vessels Availability of the vessel's fuel supply
		Additional port capacity content	Area of the port area (land part) Availability of space for technical vessel maintenance Availability of basic supplies groceries Availability of wireless internet access

	Basic port quality infrastructure	<ul style="list-style-type: none"> Technical condition of mooring devices Quality of access for vehicles Functional condition of the infrastructure Available space for the movement of people i vehicles along the coast
	Safety, protection and environmental equipment	<ul style="list-style-type: none"> Protection of vessels from the effects of waves The existence of a harbor light Acceptance and disposal of oily water The depth of the sea Availability of accepting waste from vessels Existence of port security service Availability of emergency response services

Table 75.: Categories of criteria related to functionality and technical quality of port services
Source: Based on the National Plan for the Development of Ports Open to Public Traffic of County and Local Significance (2017-2030)

Table 76 shows the criteria that must be met for a specific standard.
 Table 76.: Criteria that must be met for standard A, B, C and D.

STANDARD A	STANDARD B
<p>Existence of operational coast length Adequate lighting on 100% of the length harbor coastal edge, Availability of a draw or another methods of lifting vessels longer than 12 m or heavier than 5 tons, Availability of at least two types of fuel, Good technical condition of the coast, moorings and equipment on 90% of the port area, The existence of the built and arranged land access by boats to at least 80% of the length of the coast, Secured access for road vehicles to coast with a road width of at least 3 m, Availability of space for minor repairs and technical maintenance of boats and yachts, Availability of basic supplies groceries, Availability of wireless access Internet at least on the part of the port</p> <p>Adequate lighting on 100% of the length harbor coastal edge, Availability of a draw or another methods of lifting vessels longer than 12 m or heavier than 5 tons, Availability of at least two types of fuel, Good technical condition of the coast, moorings and equipment on 90% of the port area, The existence of the built and arranged land access by boats to at least 80% of the length of the coast, Secured access for road vehicles to coast with a road width of at least 3 m, Availability of space for minor repairs and technical maintenance of boats and yachts, Availability of basic supplies groceries, Availability of wireless access Internet at least on the part of the port areas, The existence of a harbor light, Regular acceptance and shipment of waste s vessels, Acceptance and disposal of oily water, The existence of a permanent port security service, The existence of a harbor boat, - availability taxi services,</p>	<p>Existence of operational coast length at least 50 m with a depth along the coast at least 2 m and lighting, Mooring of at least 50% of boats on coastal or pontoon berths with standard mooring equipment, The existence of at least 20 nautical berths with standard mooring equipment, The existence of at least 50 communal berths with standard mooring equipment, Availability of running water and electricity energy, Adequate lighting at least 80% the length of the harbor coastal edge, Availability of a draw or another methods of lifting the vessel with the least mass 2 tons,</p> <p>Satisfactory technical condition of the coast, moorings and equipment on 90% of the port areas, Secured access for road vehicles to coast with a road at least 3m wide, Availability of space for minor repairs and technical maintenance of boats, Availability of basic supplies groceries, Very good protection of all vessels from impact of waves - waves lower than 0.3 m, The existence of a harbor light, Regular acceptance and shipment of waste s vessels Acceptance and disposal of oily water, Existence of port security service.</p>
STANDARD C	STANDAR D
<p>The existence of an operational coastline with a length of min 20 m with a depth along the coast min 1.5 m and lighting, Mooring of at least 50% of boats on coastal or pontoon berths with standard mooring equipment,</p>	<p>Mooring on an unorganized coast, Average protection against the impact of waves</p>

Source: National plan for the development of ports open to public traffic of county and local significance (2017-2030)

Ro-ro passenger ports (piers) belong to a separate standard due to their specificity, primary function and different requirements in terms of functionality.

The standard for ro-ro passenger ports includes:

- the existence of a built and arranged ro-ro connection,
- availability of running water and electricity,
- adequate lighting on 100% of the length of the port coastal edge,
- good technical condition of the coast, moorings and equipment on 90% of the port area,
- secured access for road vehicles to coast with a road width of at least 5m
- good protection of all vessels from the impact of waves,
- existence of a harbor light, regular reception and dispatch of waste from vessels,
- reception and disposal of oily water, existence of a permanent port guard services,
- availability of emergency intervention services (health, fire services).

As a result of the above, the analysis of the appropriate documentation and the conclusions reached based on the tour of all the ports presented in Chapter 3, criteria were proposed based on which it is possible to determine the significance of an individual port open to public traffic of county and local importance in the area of Zadar County. The listed criteria represent the basis for determining the potential development directions of ports open to public traffic of county and local importance in the area of Zadar County.

These criteria are:

- 1) Accommodation of the port;
- 2) Port capacity;
- 3) Port infrastructure and additional services and
- 4) Social acceptability and financial sustainability.

The mentioned criteria belong to the group of traffic-technological and socio-economic criteria. Also, each of the mentioned criteria includes a corresponding number of sub-criteria. The port location criterion includes the following sub-criteria: natural geographical factors and traffic connections; the port capacity criterion includes the following sub-criteria: operational coastline, number of berths and vessel arrivals; the port infrastructure and additional services criterion includes the following sub-criteria: availability and condition of basic infrastructure, condition of mooring devices and availability of additional port facilities.

An overview of categories, criteria and related sub-criteria is presented in Table 77.

Table 77.: Overview of criteria, associated sub-criteria and requirements for the classification of ports

Criterion	Subcriterion	Request	Indicator
Port accommodation	Natural and geographical factors	Secure connection with open sea	There is a It exists, but it is limited There is not
		The water area in which it is enabled undisturbed maneuvering	Enabled Limited Not enabled
		Favorable oceanographic and meteorological conditions throughout the year	It doesn't satisfy requirements Partially satisfies requirements Entirely satisfies requirements
	Traffic connection	Existence of shipping lines	It exists Does not exist
		Existence of occasional passenger transportation	It exists Does not exist
		Connection to road traffic network	It exists Limited Does not exist
Port capacities	Operational coast	Length of operative coast	It doesn't satisfy needs Partially satisfies needs Entirely satisfied needs

		Technical functionality operational shores	It doesn't satisfy needs Partially satisfies needs Entirely satisfied needs
	Number of berths	Number of communal berths	It doesn't satisfy needs Partially satisfies needs Entirely satisfied needs
		Number of nautical berths	It doesn't satisfy needs Partially satisfies needs Entirely satisfied needs
	Embarkation of the vessel	Number of arrivals vessels	Meets capacity Does not meet capacity
Port infrastructure	Availability and condition of general infrastructure	Availability of water and electricity	Not available Limited Available
		The existence of a harbor light	Yes No
		Availability draw points	Yes No
		Availability cranes for vessels	Yes No
		Available space for the movement of people and vehicles	Yes Limited No
		Quality of access for vehicles	A bad one Satisfactory Good Excellent
		The possibility of supplying the vessel with fuel	Yes Not Available in the immediate vicinity

	Condition of mooring devices	Technically and functional state mooring device	It does not satisfy the requirements It partially satisfy the requirements It fully satisfy the requirements
	Availability of additional port facilities	Surface area of the land part of the port area	It does not satisfy the requirements It partially satisfy the requirements It fully satisfy the requirements
		Availability of accepting waste from vessels	Yes No
		Acceptance and disposal of oily water	Yes No
		Availability of space for technical maintenance of the vessel	Yes No
		The possibility of supplying basic foodstuffs	Is not available Available Available in in the immediate vicinity
		Availability of wireless internet	Yes Limited Not

		Emergency availability intervention services	They are not possible interventions within 30 min They are possible interventions within 30 min
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Source: National plan for the development of ports open to public traffic of county and local significance (2017-2030)

When determining the criteria, emphasis was placed on the diversity of ports of county and local significance. Namely, ports of local importance are ports that, compared to ports of county importance, usually have more modest port capacities and less developed infrastructure, and are mostly intended for the mooring of boats of local residents. For this reason, special attention was paid to defining criteria that can be applied to both local ports and ports of county importance, taking into account the general state of the port system in Zadar County. On the basis of the above, three groups of criteria have been proposed, based on which the ports in Zadar County can be classified by importance.

Although the National Plan deals with the criteria mentioned in the text in great detail, it is nevertheless pointed out that for practical application a classification by importance is simpler, according to which all ports open to public traffic in a certain area are classified as ports of county or local importance. Criteria related to traffic-technological functionality and social acceptability and sustainability can represent the basis for planning the possible development of the port.

It was suggested that ports of county importance are considered to be ports in which:

- accepts a year-round ro-ro passenger line, or
- accepts a year-round passenger line that averages annually in previous years transported at least 50,000 passengers for three years, or
- boarded and disembarked an average of at least 100,000 passengers per year in the previous three years, or
- handled an average of at least 50,000 tons of cargo or the corresponding number of vehicles per year in the previous three years, or
- transported an average of at least 1,000 ships per year in the previous three years, or are the main port of a settlement with city status.

It should be noted that it is not necessary to fulfill all the requirements, but the fulfillment of only one requirement is enough to acquire the status of a port of county importance.

Within this masterplan, a different classification was proposed, namely it was proposed that the following ports be considered as ports of county significance:

1. Ports where there is port infrastructure for safe reception and mooring of ro-ro passenger ship, shipping and fast shipping lines;
2. a) Ports in which a year-round passenger line is accepted, which, in the last three years, transported an average of at least 50,000 passengers or boarded and disembarked an average of at least 100,000 passengers or;
b) A port in which, in the last three years, an average of at least 50,000 tons of cargo or a corresponding number of vehicles or a port that has a significant role in the performance of a certain economic activity on the island have been transshipped;
3. A port where, in the last three years, on average at least one line operates daily.

In order to acquire the status of port of county importance, it is necessary to meet all the mentioned criteria. At the same time, it is necessary to comply with the criteria under point 2 only one of the criteria, i.e., it is necessary to meet either the criterion under point 2. a) or the criterion under point 2. b).

Exceptionally, a certain port can be exempted from meeting the criteria specified under point 2, when it is the only port on the island that accepts a year-round ro-ro passenger line.

Also, ports that once had a traffic function, and which necessarily must retain part of that function in the event of a temporary or permanent need to re-establish a shipping line, and in which there is a port infrastructure for the safe reception and mooring of ro-ro passenger ships, shipping and high-speed shipping lines, may be exempted from meeting the criteria under points 2 and 3.

PROPOSAL OF THE CONCEPT OF PORT DEVELOPMENT OF COUNTY AND LOCAL SIGNIFICANCE INCLUDING THE PROPOSAL OF MEASURES UNTIL 2030

The proposal of the concept of port development of county and local importance, including the proposal of measures until 2030, necessarily relies on the previous chapters, which in their core represent its integral part. More precisely, the preparation of the development concept was presented and realized through Chapter 3 through a detailed review of the current state of all the ports analyzed as part of this master plan, based on which it was concluded that the majority of local ports in Zadar County are in the function of communal connections, that is, they are mostly intended for the mooring of boats of local residents, i.e. for the permanent mooring of a vessel whose owner resides in the area of the local self- government unit or the vessel resides predominantly in that area and is registered in the ship register of the competent harbor master's office or the register of boats of the competent harbor master's office or branch and for the use of which concludes a contract on a permanent connection with the port authority and on which, as a rule, economic activities are not carried out.

Part of the port, in addition to its communal features, also has a nautical part intended for the mooring of nautical vessels, and an operational part intended for the mooring of vessels in public maritime transport, vessels for the occasional transport of passengers, cargo vessels and other vessels and fishing vessels when they carry out boarding activities and disembarks. As a rule, we are talking about ports that have a more modest port infrastructure, a lower level of mooring equipment and additional facilities. Also, based on the analysis made in Chapter 3, it was concluded that these are ports that provide services that have the function of receiving vessels on regular lines, provide mooring services for nautical vessels and fishing boats, and have a communal character.

The basic prerequisite for setting up any concept is always the legislation, that is, in this case, the criteria for classifying ports of county and local importance are necessary. With regard to the existing inadequate and long-time unupdated criteria, in Chapter 4, also based on the analysis from Chapters 2 and 3, with a special reference to the existing criteria, a proposal for new criteria for the classification of ports of county and local importance was presented, which contains the following elements, i.e., criteria:

1. Accommodation of the port;
2. Port capacity;
3. Port infrastructure and additional services, and;
4. Social acceptability and financial sustainability.

The mentioned criteria belong to the group of traffic-technological and socio-economic criteria. Also, each of the mentioned criteria includes a corresponding number of sub-criteria. The port location criterion includes the following sub-criteria: natural geographical factors and traffic connections; the port capacity criterion includes the following sub-criteria: operational coastline, number of berths and vessel arrivals; the port infrastructure and additional services criterion includes the following sub-criteria: availability and condition of basic infrastructure, condition of mooring devices and availability of additional port facilities.

When determining the criteria, emphasis was placed on the diversity of ports of county and local significance. Namely, ports of local importance are ports that, compared to ports of county importance, usually have more modest port capacities and less developed infrastructure, and are mostly intended for the mooring of boats of local residents. For this reason, special attention has been paid to defining criteria that can be applied to both local ports and ports of county importance, taking into account the general state of the port system in Zadar County. On the basis of the above, three groups of criteria have been proposed, based on which the ports in Zadar County can be classified by importance.

Although the National Plan deals with the mentioned criteria in great detail, it is still pointed out that for practical application, a classification by importance is simpler, according to which all ports open to public traffic in a certain area are classified as ports of county or local importance. Criteria related to traffic-technological functionality and social acceptability and sustainability can represent the basis for planning the possible development of the port.

It was suggested that ports of county importance are considered to be ports in which:

- accepts a year-round ro-ro passenger line, or
- accepts a year-round passenger line that averages annually in previous years transported at least 50,000 passengers for three years, or
- boarded and disembarked an average of at least 100,000 passengers per year in the previous three year, or
- handled an average of at least 50,000 tons of cargo or the corresponding number of vehicles per year in the previous three years, or
- transported an average of at least 1,000 ships per year in the previous three years, or are the main port of a settlement with city status.

It should be noted that it is not necessary to fulfill all the requirements, but the fulfillment of only one requirement is enough to acquire the status of a port of county significance.

Within this masterplan, a different classification was proposed, namely it was proposed that the following ports be considered as ports of county importance:

1. ports where there is a port infrastructure for safe reception and mooring of ro-ro passenger ship, shipping and high-speed lines,
2. a) ports in which a year-round passenger line is accepted which, in the last three years, has transported an average of at least 50,000 passengers or embarked and disembarked an average of at least 100,000 passengers or b) a port in which, in the last three years, has handled an average of at least 50,000 passengers, tons of cargo or the corresponding number of vehicles or a port that plays a significant role in performing a certain economic activity on the island,
3. a port where, in the last three years, on average at least one line operates daily

In order to acquire the status of port of county importance, it is necessary to meet all the mentioned criteria. At the same time, it is necessary to comply with the criteria under point 2 only one of the criteria, i.e., it is necessary to meet either the criterion under point 2. a) or the criterion under point 2. b).

Exceptionally, a certain port can be exempted from meeting the criteria specified under point 2, when it is the only port on the island that accepts a year-round ro-ro passenger line.

Also, ports that once had a traffic function, and which necessarily must retain part of that function in the event of a temporary or permanent need to re-establish a shipping line, and in which there is a port infrastructure for the safe reception and mooring of ro-ro passenger ships, shipping and high-speed shipping lines, may be exempted from meeting the criteria under points 2 and 3.

The concept of port development of county and local importance of Zadar County, which takes into account the capacity of the space and its real needs, is defined in the spatial planning documentation. Spatial-planning documentation for ports and port areas contains all the important determinants of port development, in which the structures of use and purpose of surfaces, surfaces of infrastructure systems, conditions and forms of use of space and conditions and methods of construction (urban planning parameters) are already determined in advance.

The process of creating and adopting the aforementioned spatial planning documentation is regulated by the Spatial Planning Act (Official Gazette (Narodne Novine), 153/13, 65/17, 114/18, 39/19, 98/19).

For all ports of county and local importance in Zadar County, two spatial planning documents are essential: Spatial Plan of Zadar County (Official Gazette of Zadar County, 2/01, 6/04, 2/05, 17/06, 3/10., 15/14., 14/15.) as a spatial plan of the regional level and the Spatial Planning Plan of the Municipality/City on whose territory the port is located, as a spatial plan of the local level.

The spatial plan of Zadar County, given the level of detail, provides basic information about ports, including their location, capacities and construction conditions. The Spatial Plan of the City/Municipality elaborates the purpose in more detail, capacities and construction conditions and methods, which are predetermined by the settings given in the Spatial Plan of the County. For individual ports, depending on their importance in terms of purpose and infrastructure and location in space, Detailed/Urban Development Plans may be prescribed through Spatial Development Plans of the City/ Municipality, which elaborate in more detail the planning settings from the Spatial Development Plan of the City/Municipality. It determines detailed for ports and port areas division into special spatial entities with regard to their purpose, presentation of building particles intended for construction and other detailed conditions of use and arrangement of space and construction of buildings on a very large scale (1:2000 or 1:1000). The aforementioned enables a detailed overview of future interventions in the area of ports and port areas, and significantly facilitates the implementation of spatial plans through the preparation and creation of project documentation.

In order to ensure the smooth and safe implementation of spatial planning documents, in this case the Spatial Development Plans of the City/Municipality and the Urbanistic/Detailed Development Plans, the spatial planning documents must be harmonized with each other, i.e. the Spatial Development Plan of the City/Municipality must be harmonized with The Spatial Plan of Zadar County, and the Urban/Detailed Development Plan must be harmonized with the Spatial Development Plan of the City/ Municipality and the Spatial Plan of Zadar County, all in accordance with Article 61 of the Law on Spatial Planning. Also, within each spatial planning document, the textual and graphic parts must be harmonized with each other.

In Chapter 5, certain inconsistencies between spatial planning documents were observed, namely:

- Non-compliance of the Spatial Plan of the City/Municipality with the Spatial Plan of Zadar County: Preko port (county significance), Silba port (county significance) and Maestral harbor (local significance);
- Inconsistency between the textual and graphic parts of the City/Municipality Spatial Development Plan: the port of Biograd na Moru (county significance), the port Tkon (county significance), Fortica port (county significance) and Silba port county significance);
- Inconsistency of the Detailed/Urban Development Plan with the Spatial Plan City/Municipality development plan: port of Biograd na Moru.

The Zadar County Port Authority is a public legal body that deals with the management, construction and use of ports open to public traffic of county and local significance in the area of Zadar County. Before defining the port and the port area in the spatial planning documentation or, if possible, during its preparation, the port administration is obliged to define the port water area of the port and then declare it at the level of the County Assembly. The basic information for defining a port and port area is the border of the land and sea part of the port, most often previously determined and declared at the level of the County Assembly, after which it is incorporated into the spatial planning documentation, the structure of use and purpose of the areas is determined, and the associated conditions are prescribed and methods of construction. Such a port and port area can be brought to its purpose based on the settings contained in the spatial plan, i.e., proceed to the preparation and creation of project documentation and the execution of works in the space upon obtaining the location and construction permit.

In Chapter 5, certain inconsistencies were observed between the graphic data on the scope of the port and the port area with the official data of the Zadar County Port Authority, namely for the following ports:

- Biograd na Moru port (water area "Jaz") (county significance),
- Tkon port (county significance),
- Jazine harbor (local significance),
- Petrčane harbor (local significance),
- Bibinje harbor (local significance),
- Foša (local importance).

In order for the development concept to be realized, i.e., implemented through spatial planning documents, it is necessary to make adjustments in all the previously mentioned spatial planning documents as well as the aforementioned adjustments with the official data of the Zadar County Port Authority, based on the analysis carried out in chapter 5. Also, it is also necessary to make other corrections mentioned in chapter 5, which concern the collision of certain uses in the port area and other minor corrections.

Urban/Detailed development plans have been created for individual ports and port areas, which are not considered in this master plan because they are not publicly available.

These are the following Detailed/Urban Development Plans:

- Urban plan for the development of part of the port of Sali: includes part of the port of Sali (local significance);
- "Božavčica" urban development plan: covers the area of the port of Božava (local significance);
- Detailed urban planning plan for the port of Kukljica - Alignment: includes the port of Kukljica (local significance).

It is necessary to analyze the previously mentioned Detailed and Urban development plans and, if there are certain inconsistencies, to carry out alignment with the Spatial Plan of Zadar County and the Spatial Development Plan of the City/Municipality.

By 2030, it is necessary to carry out all the previously mentioned actions in order to be able to begin the preparation and creation of project documentation and the realization of interventions in the area, depending on the set priority goals of the Zadar County Port Authority.

The development of ports, where no obstacles have been observed in the spatial-planning settings of all relevant spatial-planning documents, as well as problems with non-compliance with the official data of the competent public legal body (Zadar County Port Authority), can be based on the provisions for implementation and graphic representations of plans at the local level and proceed unhindered into implementation, which entails the preparation and creation of project documentation and the implementation of interventions in the space (execution of works) until 2030 for ports of local importance:

- the port of Sali (if the Urban Development Plan of part of the port of Sali is harmonized with the Spatial Development Plan of the Municipality of Sali and the Spatial Plan Zadar County),
- port of Molat, the port of Božava (if the "Božavčica" Urban Development Plan is harmonized with the Spatial Development Plan of the Municipality of Sali and the Spatial Plan of Zadar County),
- the port of Kukljica (if the Detailed Development Plan of the Port of Kukljica is harmonized with the Spatial Development Plan of the Municipality of Kukljica and the Spatial Plan Zadar County),
- Port of Draženica,
- Port of Vinjerac,
- Port of Novigrad.

After the procedure of changes and additions to the spatial planning documentation, in which all previously mentioned corrections and notes in Chapter 5 will be implemented, it will be possible to proceed with the further development of all other ports in terms of the preparation and creation of project documentation and the implementation of interventions in the space.

Also, any new content or omission of certain content due to changes in the technological process and the needs of the port and the port area, requires the modification of the existing solutions in the spatial planning documentation, and the initiation of the process of creating

and adopting new amendments and additions, from which it can be concluded that the spatial planning documentation has great importance in concept and dynamics of port development.

In the model of port development of county and local significance, based on the previously described development criteria in Chapter 4, as well as in this chapter, three development scenarios, i.e., three goal functions, are defined:

1. Development of public long-shore and linear transport and/ or economic function of the port;
2. Development of the nautical/ tourist function of the port and;
3. Development of the communal function of the port

The development of public long-shore and line transport and/or the economic function of the port is aimed at the development of traffic connections and public line passenger transport. This scenario includes the economic function of the port, which in the analyzed ports primarily refers to the reception of fishing vessels, and also includes the possibility of receiving excursion and tourist boats, as well as the boats of the resident population that play a role in the tourist economy. Also, other economic activities and services such as towing yards, etc. are included.

The development of the communal function of the port implies development aimed at providing communal moorings, i.e., the mooring of boats of the local population and increasing the quality of services related to the communal function in the area of the port.

The development of the nautical function of the port implies a development aimed at the reception of nautical tourism vessels and an increase in the quality of services related to the nautical function in the area of the port. It refers to ports that have significant potential in the development of nautical tourism.

Development directions are determined based on the existing situation and adapted to ports open to public traffic of local and county importance in the area of the Zadar County Port Authority. When defining development directions, existing ones were considered the state of the ports, their basic function, but also the development potential and needs of all stakeholders of the system.

Furthermore, the model also defines four criteria based on which it is determined scenario selection:

1. Port accommodation
2. Port capacity
3. Port infrastructure and additional services
4. Social acceptability and financial sustainability

Each of the mentioned criteria contains its own criteria sub-criteria:

1. PORT ACCOMMODATION

For the purposes of this paper, the location of the port is a criterion that consists of two sub-criteria: natural geographical factors and transport connectivity.

This criterion represents the basis for the evaluation of the port with regard to its geographical location and the connection of the port with other ports and urban and economic centers in the County and beyond.

NATURAL - GEOGRAPHICAL FACTORS – this sub-criterion refers to acceptability of the development of an individual port with regard to natural influences, and primarily this refers to assessment of acceptability in relation to wind, waves, sea currents etc.

The sub-criterion natural - geographical factors implies that the port has:

- safe connection with the open sea,
- water area in which unhindered maneuvering is possible (sufficient depth and width of the water area that is compatible with current needs and future development),
- favorable oceanographic and meteorological conditions throughout the year.

TRANSPORT CONNECTIVITY is extremely important for the development of the islands and the improvement of the quality of life of the local population on the islands. Within this criterion, it is necessary to analyze the existing connection between the mainland and the islands and the islands with each other, as well as future development needs and possibilities. The number of shipping lines and occasional passenger transport play an important role in this. During the analysis, apart from the existing situation, it is necessary to take into account the need for additional capacities due to the introduction of new shipping lines, the improvement of the quality of existing capacities for receiving ro-ro ships, and the estimated demand for passenger transport.

In addition, it is very important to determine the quality of the connection of a certain port to the road transport network, as well as potential development opportunities, based on which the sub-criterion transport connectivity implies:

- the existence of a shipping line,
- the existence of occasional passenger transport,
- connection to the road transport network.

2. PORT CAPACITIES

Within the mentioned criteria, the possibility and need for increasing the existing port capacities necessary for the reception of ships is evaluated. This primarily refers to the increase in the number of berths and the construction and extension of operational shores.

When evaluating the mentioned criteria, in addition to the possibility and need for increasing the capacity within the mentioned sub-criteria, it is necessary to consider the improvement of already existing capacities. In this way, it is possible to determine in which direction improvement is needed within each sub-criterion.

- Operational coast - the sub-criterion operational coast means an operational coast with appropriate technical and technological characteristics, to which a ship can be moored from the near or far environment and which is available to all users according to the same conditions, i.e., which is not occupied by permanently moored ships and/or boats. Preference is given to ships on regular lines.
- Number of moorings – sub-criterion number of moorings, primarily refers to the number of communal and nautical moorings. However, the possibility and need for an increase is also being considered capacity of fishing moorings.
- Boarding of vessels - the sub-criterion Boarding of vessels refers to the average the number of daily vessel arrivals in the port.

3. PORT INFRASTRUCTURE

The functional and technical level of the service, i.e., the functionality of the port infrastructure, the condition and quality of the mooring devices, and the level and quality of port services and other activities in the port area are evaluated within the above criteria.

- Availability and condition of the basic infrastructure - within the mentioned sub-criterion, the port's equipment with basic elements for the provision of transport services and accessibility for certain categories of vessels are evaluated. Within this sub-criterion, the availability of water, electricity, the existence of a port light, the availability of a towing area, the availability of a crane for vessels, the available space for the movement of people and vehicles along the coast, the quality of access for vehicles and the possibility of supplying vessels with fuel are analyzed.
- The state of the mooring devices - this sub-criterion analyzes the technical and functional condition of the mooring device. When evaluating the mentioned criterion, needs and development possibilities are also taken into account.
- Availability of additional port facilities - within the specified sub-criterion, the existing condition is evaluated, as well as the possibility and need for the development of services with added value in a certain port area. The sub-criterion availability of additional port facilities includes the surface area of the land part of the port area, the availability of receiving waste from vessels, the reception and disposal of oily water, available space for technical maintenance of vessels, the possibility of supplying basic foodstuffs and the availability of wireless Internet access, the existence of a security service and the availability of emergency intervention services.

4. SOCIAL ACCEPTABILITY AND FINANCIAL SUSTAINABILITY

The need for a certain port service by the end users of the system is assessed within the above criterion. Within this criterion, the demand for liner transport, demand related to nautical tourism, excursion tourism, demand for communal moorings and fishing can be assessed.

- NEEDS OF THE LOCAL POPULATION refers to the needs of the local population who are regular users of port services.
- THE NEEDS OF BOATERS - within this sub-criterion, the needs of boaters are assessed relations of the needs of sailors, which are primarily related to the nautical function of the port.
- THE NEEDS OF THE ECONOMY - this sub-criterion refers to the needs arising from economic activities, primarily fishing.
- FINANCIAL SUSTAINABILITY - within the mentioned sub-criterion, the possibility of closing the financial structure based on realized income and expenses, i.e., costs related to investment in port infrastructure and its maintenance, is assessed. Also, the complexity of the necessary operations (construction, conversion, rehabilitation, modernization, etc.) is taken into account.

On the basis of the analysis of the existing situation and the specified criteria using the method of multi-criteria analysis, models were made - directions of development for each of the 20 ports included in this masterplan. Within the framework of the proposal for the concept of port development of county and local importance, including the proposal of measures until 2030, below is a summary analysis for each port.

LUKA PREKO

According to the data of the Agency for Coastal and Line Maritime Transport, the port of Preko represents one of the three busiest lines on the eastern Adriatic. The full capacity of the port was obtained through reconstruction in 2011. The development of the port of Preko should, even in the future, be aimed at the development of public long-shore and linear traffic and/or the economic function of the port. The size of the operational waterfront largely meets the needs of the current lines, and in case of need, it is also possible to engage a larger ship on this line. Currently there is no need for further investment in port infrastructure, but the level of additional facilities can be improved.

Additional interventions in the port infrastructure intended for the reception of ro-ro passenger ships are currently not necessary, however, considering the developed tourism economy, an increase in the number of tourists can lead to a greater need for the construction of additional nautical capacities, as well as capacities intended for the local population.

Harbor pools 1 and 2 are currently built and arranged in the largest scale and capacity. At the passenger terminal in the southern part, a breakwater can be extended to protect the port from the SE wind, and in the continuation of the plateau, nautical moorings in the port of Preko can be provided. Marina Olive Island and Marina Preko are located in the immediate vicinity of the port of Preko.

Marina Olive Island in Sutomišćica is a marina that, in addition to accepting boats, is also equipped to accept larger yachts. In this regard, the port of Preko can compete only in the price of the service. Marina Preko is located in port basin 1 of Preko port and they are physically connected. Marina Preko is equipped with a large number of moorings, with the possibility of mooring larger boats and smaller yachts. The aforementioned marinas have taken over the nautical berths in the port of Preko, however, a potential upgrade at the passenger terminal would provide additional berths in that part of the port of Preko.

PORT OF BIOGRAD NA MORU

The future development of the port of Biograd should be aimed at the development of public long-shore and linear traffic and/or the economic function of the port. Analysis of the number of passengers and vehicles in the five-year period indicates a trend of increasing the number of passengers and vehicles. Harbor pools 1 and 2 are currently built and arranged in the largest scale and capacity. At the passenger terminal in the southern part, a breakwater can be extended to protect the port from the SE wind, and in the continuation of the plateau, nautical moorings in the port of Preko can be provided. Marina Olive Island and Marina Preko are located in the immediate vicinity of the port of Preko. The increase corresponds to the existing capacities of the port. During 2018, the operational coast and pier in port basin 1 were renovated for economic purposes.

The parts of the port inside the breakwater and the southern part of the operational coast do not have the possibility of capacity expansion, and the maximum capacity was used by installing a mooring system perpendicular to the coast. Harbor pool 2 was also used to its maximum capacity by installing pontoons. There are no more expansion possibilities in this area. In the future, the communal function of the port should also be developed. It is also possible to improve the port infrastructure in the communal part of the port.

Biograd n/M is a town located at the entrance to the Murter Sea and is one of the closest places to visit the Kornati National Park. This location is well used in terms of nautical tourism, and Biograd n/M is a large nautical center with as many as two marinas in which port capacities have been replaced.

Considering the current location of the port, improving the condition is an extremely complex problem.

PORT OF TKON

With the construction of the new ferry port, the capacities of the operational shores, as well as nautical and communal moorings, have been increased. By increasing the number of operational shores, a greater number of commercial (fishing, tourist, smaller cargo) ships can dock. Transit moorings are provided in the western port, and nautical moorings further along the coast. With this expansion, the port of Tkon increased its capacity.

The city of Biograd n/M is the administrative center in this part of Zadar County, so a line connection with the southern part of the island of Pašman is a necessary connection to the mainland. For this reason, it is necessary to maintain and develop public long-shore and linear transport and/or the economic function of the port of Tkon in the future. The port of Tkon is connected to the port of

Biograd by state ferry line no. 432. The analyzed data indicate a trend of increasing passengers and vehicles on the ferry line in the port of Tkon.

Existing capacities and port infrastructure meet existing traffic needs.

Port Tkon is the Decision of the Government of the Republic of Croatia on the list of landing places for Port of Tkon. In the future, the communal function of the port should also be developed. It is also possible to improve the port infrastructure in the communal part of the port fishing vessels that carry out commercial fishing at sea designated as a landing place for fishing vessels, therefore this component must also be taken into account when planning the further development of the port.

The development of the port should also be aimed at increasing the capacity of communal berths and on the improvement of port infrastructure in the communal part of the port.

The construction of new capacities in the port of Tkon for nautical berths created favorable conditions for attracting excess traffic that occurs in the port of Biograd n/M during season.

PORT OF BRBINJ/LUINA

The port of Brbinj has the possibility of development in all three directions. For this reason, the development of the port should be polycentric with an approximately equal emphasis on nautical tourism, the development of public and liner traffic and/or the economic functions of the port and the communal function of the port.

Port Brbinj/Lučina is the only ferry connection between Dugi Otok and the mainland. Analysis of the number of passengers and vehicles in the five-year period indicates a trend of increasing the number of passengers and vehicles. The port's capacity meets current needs, and in the event of the need to increase the number of vehicles, it is possible to increase the frequency of trips, as ferries with a large capacity of vehicles and passengers sail on the mentioned line. This is based on the fact that the aforementioned step would satisfy the increase in the number of vehicles with minimal cost compared to the increase of the existing operating plateau to accommodate larger ro-ro ships.

Given that the port of Brbinj is the only ferry connection between Dugi Otok and the mainland, emphasis should be placed on improving the level of additional facilities that are currently not at a satisfactory level.

By arranging the southern part of the operational plateau, an operational coast would be obtained that can be used for transit berths or for docking of commercial (fishing, tourist, smaller cargo) ships. A part of the operational coast intended for the mooring of fast shipping lines is a necessary extension.

In terms of increasing the number of mooring places in the communal part of the port, it is possible, first of all, to arrange the coast of the mentioned area, which would significantly increase the capacity of communal moorings. A significant improvement of port capacities and the level of additional port facilities in the communal part of the port is needed.

Taking into account the significant traffic of nautical vessels in the immediate vicinity, it can be considered that the port lacks nautical moorings. By arranging the coast, it is possible to obtain the capacities of nautical moorings, which are lacking during the season.

PORT OF FORTICA

The future purpose of the port of Fortica is directed primarily as an operational shore for ships and ferries. Namely, the port of Fortica with its position is the only port that has the position and depth to receive ships in the event of the impossibility of traffic via the bridge over the Ljubačka vrata. Due to its exposure to winds from the northeast (NE) and winds and waves from the southeast (SE), and due to the lack of natural shelter, there is no possibility of safely accepting boats on the communal and nautical connection.

However, due to the poorly developed port infrastructure, the below-average level of additional facilities and the extremely poor condition of the access roads, it is possible to consider abolishing the status of a port of county importance. Namely, the current situation in the port area as well as the demand for port capacities does not justify granting the status of a port of county importance. A significant improvement of the port infrastructure and available additional facilities is needed.

PORT OF ZAGLAV

The future development of the port of Zaglav needs to be directed towards a greater emphasis on the nautical component, given that there are necessary prerequisites for this, and that such development could support the tourist economy, as well as other economic activities related to nautical tourism. The capacities for nautical tourism vessels can be assessed as insufficient for the demand that exists during the summer months. The entire area of the bay in which the port is located represents a possible space for increasing nautical capacities, and by improving the infrastructure for mooring boats, it can increase its influence. Increasing the capacity in terms of nautical berths can be achieved by installing floating jetties, taking into account the limitations arising from the proximity of a gas station (for example, a larger ship or a boat floating inside a protected part of the harbor waiting for a berth at a gas station, etc.).

The increase in nautical capacities must also be accompanied by the improvement of the coast in the area intended for communal moorings. Today's capacities of communal moorings can be assessed as adequate, and if there is a need to increase capacity, it is possible to arrange the coast of the mentioned area, which would increase the capacity for the mooring of smaller boats.

With regard to the development of public long-shore and line transport and/or the economic function of the port, it is important to point out that the port of Zaglav is located in the immediate vicinity of the towns of Žman, Luka and Savar, and the said towns have 574 inhabitants, which is 32% of the total population of Dugi Otok. In the last five years, there has been a trend of increasing the number of passengers on the ship line no. 406 and fast ship line no. 9406. The future development of public long-shore and linear transport and/or the port's economic function can be based on these facts. Current port capacities meet current requirements. The capacities of the operational part of the port in the tourist season are partly insufficient, while outside the tourist season they significantly exceed the real needs for mooring.

The current operational coast does not have the possibility of additional expansion, and in case of an increase in the number of lines, a part of the operational coast with the ferry pier can be arranged and extended.

PORT OF SILBA/ŽALIĆ

The port of Silba/Žalić was renovated and reconstructed in 2020, therefore the current state of the port of Silba/Žalić is characterized by a high-quality port infrastructure that fully meets the conditions for the safe reception of ro-ro passenger and passenger ships on existing lines. The capacity of the port is also adequate. The operational coast is of sufficient size to allow the docking of commercial (fishing, tourist, smaller cargo) ships, provided that they do not interfere with regular passenger traffic.

With the current amount of maritime traffic and the number of lines of contact, the port of Silba/Žalić represents the main port in the wider environment. In addition, the port of Silba/Žalić is the only port on the island of Silba where it is possible to receive ro-ro passenger and passenger ships, so the future development of the port must be focused on the maintenance and development of public long-shore and of liner transport and/or economic function of the port. In the entire port area, improvement is possible in terms of available additional port facilities. Also, it is suggested to improve the hourly rate of docking in the port.

The development of the port should also be focused on the development of the communal function of the port. The development should go in the direction of increasing the number of communal berths and modernizing the port infrastructure in the communal part of the port. It is proposed to improve port infrastructure and port services.

Due to the exposure of the port of Silba/Žalić to winds from the southeast, west and northwest, docking of fast shipping lines is possible. This is the reason to consider the arrangement of the operational coast and enable the docking of ferry lines in the port of Silba, located on the eastern side of the island of Silba.

The port currently has no dedicated nautical moorings, which, due to the increased demand for nautical moorings, can be a problem. However, the development of the nautical component of the port is limited.

PORT OF PAG

The future purpose of the port of Pag is as a port of refuge for the Bay of Pag, a communal port and a port for the docking of tourist ships, especially after the deepening of the Privlački Gaz. Considering that a certain number of fishing boats and ships gravitate to the port, it is necessary to develop the economic function of the port. If there is a need to increase the number of communal berths, there is a possibility of increasing the total capacity by installing additional pontoons.

In certain parts of the port area, it is possible to improve the port infrastructure and increase the available additional facilities. It is proposed to improve port infrastructure and port services.

PORT OF NOVIGRAD

The port of Novigrad has the possibility of development in all three development directions. The sea of Novigrad is also known for the cultivation of shellfish, so in the port of Novigrad the coast has been restored for the needs of growers. The economic function of the port of Novigrad needs to be developed in the future as well.

Regarding the development of the communal and nautical function of the port, it is necessary to gradually increase the scope and quality of additional services, primarily for users of communal connections.

Also, it is necessary to determine the peak capacities of the berths based on actual spatial possibilities. Increasing the capacity is possible by placing a pontoon in the part of the harbor intended for communal connection, in the immediate vicinity of the stretch.

In the future, the development of the port area should be aimed at modernizing the existing capacities and increasing the available facilities in the said area.

LUKA SALI

The development of the port of Sali should be directed towards increasing the port's nautical and communal capacities, i.e., towards the development of the port's communal and nautical functions. Also, it is necessary to determine the peak capacities of the berths based on actual spatial possibilities. Increasing the capacity is possible by placing a pontoon in the part of the harbor intended for communal connection, in the immediate vicinity of the stretch.

Currently, it is planned to renovate the existing special purpose port - nautical tourism port and increase the number of berths. Also, along the north-western border of the port, the expansion of the operational coast and the construction of a breakwater are planned. The pontoon in the southeastern part of the harbor will be retained, and the others will be reconstructed. In addition, the construction of floating pontoons is planned, to which access will be achieved via a breakwater.

By the decision of the Government of the Republic of Croatia on the list of landing places for fishing vessels that carry out commercial fishing at sea, Sali-Mardešić is designated as a landing place for fishing vessels, so when planning the further development of the port it is necessary to take into account this component as well.

In the rest of the area, the arrangement of green and pedestrian areas, the installation of urban equipment and the construction of an infrastructure network (road and pedestrian areas, water network, sea water desalinizer, drainage, electronic communication network) are planned.

LUKA BOŽAVA

The future development of the port of Božava should be directed towards the increase of nautical capacities, that is, the development of the port's nautical function. From the aspect of nautical moorings, the port of Božava has the potential for more nautical moorings, which is possible by improving the coast and deepening the area inside the breakwater, the mooring capacity would also increase. Also, a part of the operational coast intended for the mooring of high-speed lines it is necessary to extend it.

The entire port area needs an increase in the level of available additional facilities, and the port infrastructure needs to be modernized on the part of the coast intended for communal berths. Also, additional investments in higher quality nautical-tourism services are needed in order to make the port more attractive to sailors.

PORT OF VINJERAC

In the existing port area, it is necessary to determine usage zones - for communal mooring, for ships in transit and if there are spatial possibilities for nautical mooring. When determining the capacity, priority should be given to the communal connection in such a way as to ensure a sufficient number of connections for the needs of the resident population.

In the future, the development of the port area should be aimed at modernizing the existing port capacities and increasing the available facilities in the said area.

PORT OF KUKLIJICA

The future development of the port of Kukljica should be directed towards the development of the communal and nautical functions of the port. In the communal part of the port, it is necessary to modernize the port infrastructure.

By the decision of the Government of the Republic of Croatia on the list of landing places for fishing vessels that carry out commercial fishing at sea, the port of Kukljica is designated as a landing place for fishing vessels, so this component must also be taken into account when planning the further development of the port.

From a nautical point of view, the port of Kukljica with the bay of Ždrelačica has one of the most favorable positions in the Republic of Croatia. It is estimated that in the summer there is a traffic of about 2,000 ships per day in this area. The port of Kukljica is a frequent resting place for boaters before visiting the Kornati National Park. The natural geographical features of this area create a basis for the development of nautical tourism. Also, despite the existence of neighboring nautical capacities, there is still potential for improving existing capacities in the port of Kukljica, but also for increasing capacity.

Additional investments in higher quality nautical tourism services are needed in order to continue the development of nautical tourism in the right direction.

PORT OF BIBINJE/BAY JAZ

The development of the port of Bibinje/Jaz bay should be directed towards the increase of the communal and nautical capacities of the port, i.e., the development of the communal and nautical function of the port. Also, in the future, the development of the port area should be aimed at increasing the available facilities in the said area and modernizing the existing port infrastructure. Also, deepening the rest of the bay (from the last jetty to the bottom of the bay) would provide additional places for mooring boats. After deepening, it is also possible to install an additional pontoon for communal and/or nautical moorings. It is proposed to modernize the existing port infrastructure and increase its available additional contents in the specified area.

PORT OF JAZINE

Given that there is a lack of communal moorings for the boats of the local population in the area of Zadar, in the future, priority should be given to communal moorings in the development of the port, i.e., there is a clear need to develop the communal function of the port. Given that the reconstruction of the port of Jazine was completed in 2019, it is today a representative city port located at the very entrance to the old city center. In the future, the development of the port area should be aimed at modernizing existing and installing new fixed mooring systems.

LUKA FOŠA

The future development of the port of Foša is directed towards the development of the communal function of the port. Given that the capacity increase is limited, it is proposed to modernize the existing port infrastructure and increase the available additional facilities in the port area.

PORT MAESTRAL

Given that there is a lack of communal moorings for the boats of the local population in the area of Zadar, in the future priority should be given to communal moorings in the development of the port, i.e., the communal function of the port should be developed.

It is necessary to increase the capacity of communal moorings, significant investment in the existing port infrastructure, but also to increase the available additional facilities in the mentioned area. In this way, a sufficient number of berths for the needs of the resident population can be ensured, that is, the gap between supply and demand can be reduced.

PORT OF DRAŽENICA

Similar to the port of Maestral, and considering that there is a lack of communal moorings for the boats of the local population in the area of the city of Zadar, in the future priority should be given to the municipal connection when arranging the port, that is, it should be a priority to develop the communal function of the port. It is necessary to increase the capacity of communal moorings, significant investment in the existing port infrastructure, but also to increase the available additional facilities in the mentioned area. In this way, a sufficient number of berths for the needs of the resident population can be ensured, that is, the current gap between supply and demand can be reduced.

PORT OF PETRČANE

The development of the port of Petrčane should be directed towards increasing the communal and nautical capacities of the port, i.e., towards the development of communal and nautical functions of the port. Also, in the future, the development of the port area should be aimed at increasing the available content in the said area and modernizing the existing one by the decision of the Government of the Republic of Croatia on the list of landing places for fishermen port infrastructure.

PORT OF MOLAT/LUČINA

The future purpose of the port of Molat/Lučina is aimed primarily as an operational coast intended for ferry lines and high-speed lines, that is, the development of the port should be aimed at the development of public long-coastal and liner traffic and/or the economic function of the port. The port infrastructure in this area meets the current needs, but investment and an increase in available additional facilities are needed.

By the decision of the Government of the Republic of Croatia on the list of landing places for fishermen vessels that carry out commercial fishing at sea, the port of Molat/Lučina is designated as a landing place for fishing vessels, so this component must also be taken into account when planning the further development of the port.

Also, considering the nautical potential, it is proposed to direct the development of the port towards the increase of nautical capacities, in such a way that this segment is a function of stronger local tourism development.

The existing capacities of communal berths meet the current needs, but modernization of the port infrastructure and an increase in the level of additional facilities in the communal part of the port is necessary.

CONCLUSION

"Master Plan for the Development of Ports Open to Public Traffic in Zadar County" is a complete document created with the aim of gaining insight into the current state and future development possibilities for each of the 20 selected ports of county and local importance - 8 ports open to public traffic of county importance - Preko, Biograd n/M, Tkon, Brbinj/Lučina, Pag, Zaglav, Fortica, Silba/Žalić, and 12 ports open to public traffic of local importance - Sali, Molat/Lučina, Božava, Maestral, Kukljica, Draženica, Vinjerac, Jazine, Petrčane, Bibinje/Jaz, Foša and Novigrad.

The document contains in order:

- analysis of reference legislation related to all activities within the scope of the Zadar County Port Authority, review and detailed analysis of the current situation,
- proposal of new criteria for the classification of ports of county and local significance,
- analysis of the spatial planning documentation of ports of county and local significance,
- elaboration of development criteria and guidelines for further planning of port development, which includes analysis of development possibilities, i.e. determination of the needs of key stakeholders of the system, with the aim of determining potential development directions that together form a proposal for a port development concept of county and local significance, including a proposal for measures until 2030.

The overview of the current situation is based on a detailed analysis, that is, a trip to the field and an inspection of each individual port included in this master plan. All additional data needed for the analysis were collected from the CIMIS system, the State Statistical Office, the Ministry of Maritime Affairs, Transport and Infrastructure, the Agency for Coastal Line Maritime Transport, the Zadar County Port Authority and the entire reference legislation in the Republic of Croatia and the European Union. This comprehensive approach made it possible to obtain the real situation, gain insight into the needs of all stakeholders (management and user) of the system, based on which the direction of its future development was determined for each of the ports by applying the scientific method of multi-criteria decision-making.

Most of the ports of county importance base their importance on the line traffic that occurs within them and that is of crucial importance to the local population. The exception is the port of Fortica, where the current situation in the port area as well as the demand for port capacities do not justify granting the status of a port of county importance.

It is important to point out that the ports of Tkon, Silba, Preko and Biograd were renovated and expanded, which increased the port capacities, improved the quality of the port infrastructure and increased the level of available additional facilities. The aforementioned interventions satisfy the needs of public long-shore and line traffic. However, the development of the mentioned ports in the future should also be directed towards the development of public long-shore and line traffic and/or the economic function of the port. In doing so, it is important to highlight the nautical potential of the ports of Preko and Tkon, and the need to increase the capacity of communal berths and/or improve the port infrastructure in the communal part of the ports of Biograd and Silba.

The ports of Zaglav and Brbinj have the possibility of development in all three directions. The port of Brbinj/Lučina is the only ferry connection between Dugi Otok and the mainland, and the existing

capacities meet the needs of public long-shore and line traffic, and future development should be directed at increasing the available additional port facilities.

In the communal part of the port of Brbinj, a significant investment is needed to increase the port capacity, improve the port infrastructure and increase the level of additional port facilities. Considering the potential of the port and the significant traffic of nautical vessels in the immediate vicinity, it is necessary to develop the nautical functions of the port of Brbinj.

By improving the coast, it is possible to obtain the necessary capacities of nautical moorings, which are in short supply during the season.

The entire area of the bay where the port of Zaglav is located represents a possible space for increasing nautical capacities, so its future development should be directed towards a strong emphasis on the nautical component. The increase in nautical capacities must also be accompanied by the improvement of the coast in the area intended for communal moorings due to the need for improvement of the ambient atmosphere. Today's capacities of communal moorings can be assessed as adequate, and in the case of indicating the need to increase capacity, it is possible to improve the coast of the mentioned area, which would increase the capacity for the mooring of smaller boats. Regarding the development of public long-shore and line transport and/or the economic function of the port, it is important to point out that the current capacities mostly meet the current requirements. Also, in the entire port area, it is possible to significantly improve the port infrastructure and increase the available additional facilities. It is proposed to improve port infrastructure and port services.

Finally, the analysis includes the port of Pag on the island of Pag. The future purpose of the port of Pag is as a port of refuge for the Bay of Pag, a communal port and a port for the docking of tourist ships, especially after the deepening of the Privlački Gaz. Considering that a certain number of fishing boats and ships gravitates to the port, it is necessary to develop the economic function of the port.

Most of the harbors of local importance base their importance on their communal character, that is, on the possibility of mooring and accepting the boats of the local population. Some of the local ports have modest port capacities, average port infrastructure and a low level of available additional facilities. Also, it was determined that in most ports of local importance there is no need to develop line public and long-shore transportation. The exception is the port of Molat/Lučina, which is connected to the city of Zadar by a ferry and high-speed boat line, which is why it is extremely important for the local population and for the development of the island of Molat itself. Also, considering the nautical potential, it is proposed to direct the development of the port towards the increase of nautical capacities, in such a way that this segment is a function of stronger local tourism development.

In the ports of Sali, Božava and Kukljica there are shipping and fast shipping lines, but there is no ferry (ro-ro) traffic. It is important to point out that the ports of Sali and Božava on Dugi otok have a distinct nautical potential, on the basis of which their development in the future should be directed towards the development of the port's nautical function. However, in the aforementioned ports, it is necessary to develop the communal function of the port, which must accompany the increase in nautical capacities for the improvement of the ambient atmosphere. This primarily applies to the port of Sali, while the port capacities in the communal part of the port of Božava are

at a satisfactory level, but the level of additional available facilities can be increased and the port infrastructure can be modernized.

Regarding the development of the port of Kukljica on the island of Ugljan, primarily, it should be directed towards the development of the communal function of the port, but the nautical potential that exists in the port should not be neglected either.

In the area of the city of Zadar, four local ports were analyzed: Maestral, Draženica, Foša and Jazine. Due to the lack of communal moorings in the area of the city of Zadar, the development of these ports should be directed towards the development of the communal function of the port. At the same time, special importance should be placed on the development of the ports of Draženica and Maestral, where existing capacities can be significantly increased and where significant investments in port infrastructure and an increase in the level of available additional facilities are needed. This is necessary in order to ensure a sufficient number of berths for the needs of the resident population, that is, to reduce the current gap between supply and demand.

In the immediate vicinity of the city of Zadar, in the towns of Petrčane and Bibinje, there are two more ports of local importance: the port of Bibinje/Uvala Jaz and the port of Petrčane. The development of the mentioned ports should be directed towards increasing the communal and nautical capacities of the port, i.e., towards the development of the communal and nautical functions of the port. Also, the future development of port areas should be aimed at increasing the level of available additional facilities and modernizing the existing port infrastructure.

At a distance of about 30 km from the city of Zadar, there are two more ports of local importance analyzed by this plan: the port of Vinjerac and the port of Novigrad. In the port of Vinjerac, the communal function of the port should be developed, while the port of Novigrad has the possibility of development in all three development directions. The sea of Novigrad is known for the cultivation of shellfish, and due to the importance of this activity for the population of Novigrad and surrounding towns, it is necessary to develop the economic function of the port of Novigrad in the future. Regarding the development of the port's communal and nautical functions, it is necessary to gradually increase the scope and quality of additional services, primarily for users of communal moorings. Also, in the mentioned ports, emphasis should be placed on improving port areas, modernizing existing capacities and increasing the level of available additional facilities.

Based on everything presented, this document entitled "Master plan for the development of ports open to public traffic in Zadar County" represents the basis for determining the future development of 20 selected port areas, i.e., ports of county and local importance open to public traffic in Zadar County. It is important to point out that this master plan, in addition to the analysed port areas, can also represent the basis for planning the development of the remaining ports in Zadar County, i.e., under the management of the Zadar County Port Authority, which are not directly covered by this document.