

An Overview of Criteria and Scenarios Relevant for Development of Seaports of County and Local Importance in the Republic of Croatia

Alen Jugović^a, Jelena Jardas Antonić^b, Dea Aksentijević^a

The development of seaports is a complex process influenced by a number of external factors, from the economic ones to the social environment. Seaports differ from each other in their spatial and functional characteristics, the complexity and purpose of their operation, as well as the need for investment and additional construction of port infrastructure and superstructure, so their development must be approached analytically. In order for the proposed development guidelines to be applicable to ports with similar characteristics, it is necessary to define criteria for their classification. Relevant criteria for classifying and planning the development of seaports are derived from: laws and regulations established by legal regulations, goals and plans proposed by current strategic documents, and spatial plans that set the conditions for planning, forming and developing ports in a certain area. The purpose of this scientific work is to determine

which national and regional regulations and documents affect the development of regional ports in the Republic of Croatia, and to define classification criteria that will serve as a basis for the formation of development directions for seaports.

1. INTRODUCTION

Seaports can be defined as places where cargo and passengers are transferred to and from waterways and onto the coast. They serve primarily as transportation points in the transportation chain, but also as locations where industrial and logistical activities can take place (Talley, 2009). Seaports are considered an important subsystem of the maritime and transport system and accelerators of transport movements, but also of the development of many economic activities in the country. They are a gathering point where traffic and means of transportation from all traffic directions converge. Ports represent the economic catalyst for the regions they serve, where the bundling of services and activities creates benefits and socioeconomic prosperity (Bichou et al., 2005). They are important for economic value creation as dynamic industrial and local clusters (Pardali et al., 2016). Port services and activities create aggregate benefits and socioeconomic wealth for a geographic region through urban planning and environmental economics. Seaports are therefore seen as drivers and engines of local and national economic development (Alblooshi and Ebrahim, 2022). Accordingly, policymakers are interested in including ports in regional policies, such as urban planning and expansion, safety, security, and environmental sustainability (Deng and Hu, 2016). The role or function of the port as a node

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- ~ Development scenarios
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a. University of Rijeka, Faculty of Maritime Studies, Rijeka, Croatia

e-mail: dea.aksentijevic@pfri.uniri.hr

b. University of Rijeka, Faculty of Economics and Business, Rijeka, Croatia

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in the entire transportation chain is synonymous with its role or function in trade and tourism (Luković, 2020). Ports evolve both functionally, in terms of the types of cargo they handle, and spatially, in terms of branching infrastructure and position in shipping networks. At the global level, four main generations, i.e. phases, can be identified chronologically, each corresponding to a specific period of time. The chronological sequence of port development can be divided according to three main typological factors (Notteboom et al., 2021):

- The external environment, which includes a range of external political, economic, and technological developments, affects the role and function of the port. The most recent development drivers are globalisation, sustainability, and digitalisation.
- The spatial organisation, which includes the scale and scope of port activity.
- The organisation and strategy of ports, which are becoming complex entities, manage port network communities with the aim of developing integrated transport and logistics services for their hinterland.

Some scientists have also proposed "fifth generation incorporation" (5GP) with the introduction of a "port ladder" to user- and community-oriented ports.

While ports are important to the modern global economy, their role in promoting local economic development is less clear. A port provides local employment opportunities in two ways: on the port's premises through the managing Ports Authority, and in private businesses located in or near the port to provide port-related services (Santos et al., 2018). It is important to note that a port can range from a small wharf where a ship can dock to a very large centre with many ports, terminals, and clusters of industries and services (Bichou et al., 2005). Given the diversity of their spatial and functional characteristics, the complexity of their operation, and the high investment costs of building port infrastructure and superstructure, the development of ports must be approached analytically and thoughtfully. It is necessary to determine the priorities, goals, and future action plan, and to define why and in what way an action should be carried out (Rupčić, 2013).

Although many scientists have so far proposed a number of classification frameworks for seaports, there is still no universally accepted way of classifying them. The reason for this is the lack of clear criteria for determining their similarities, on the basis of which development directions for ports could then be proposed. However, the aforementioned problem arises from the great diversity of legal regulations in the areas where the ports are located, from their natural and locational conditions: from the social factors that influence them, the different functions for which they are intended, to the uneven development of their infrastructure, etc.

For this reason, it is necessary to create master plans for the development of ports in each region, proposing more specific objectives and actions that take into account all the characteristics of each region. This comprehensive but concrete document can identify specific goals and guidelines for the further development of the port and serve as a starting point for the creation of more concrete action plans.

The aim of this paper is to determine which national and county regulations and documents influence the development of regional ports in the Republic of Croatia, and in accordance with them, to define classification criteria that will provide a starting point for determining the development directions of ports.

This paper is divided into five parts. After the introduction, a brief overview of the documents and regulations that govern the operation of the ports of a county was given. The third part of the paper explains the theoretical directions of the seaport development and the identified classification criteria. The fourth part of the paper describes the classification procedure of region seaports and the ways of determining their development scenarios. The fifth part contains the authors' conclusions and suggestions for possible ways to develop the seaports.

2. ANALYSIS OF STRATEGIC DOCUMENTS AND REGULATIONS RELEVANT TO SEAPORT DEVELOPMENT PLANNING

The first step in determining the criteria relevant for planning the development of seaports is to identify the rules established by legal regulations, to consider the objectives and guidelines of current international and national strategic documents related to the maritime sector and to study the spatial plans that establish the conditions for planning, forming, and developing ports. This chapter provides a brief analysis of the legal framework that governs ports and their management, the national and European strategic documents that directly or indirectly affect their operation and development, and explains the importance of spatial plans.

2.1. Analysis of Legal Rules and Regulations for Port Development

The legal acts that directly or indirectly regulate the ports and their management methods are the starting point for determining the basic rights and obligations related to the port area. In particular, the regulations that directly relate to the definition of the status and development of seaports are explained below. It is important to note that the laws relating to Croatian ports are aligned with European legislation. Therefore, this part of the work will be based on the laws of the Republic of Croatia.

According to Article 42 of the Law on Maritime Property and Seaports (2020), ports open to public traffic in the Republic of Croatia are divided into the following categories, depending on their size and importance:

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

For the purposes of this scientific article, the research focus is on ports of local and county importance, which are referred to as ports of regional importance according to international frameworks definitions.

The classification of ports in the Republic of Croatia, according to the above mentioned classification, is determined by the Decree on the classification of ports open to public traffic and special purpose ports, 2004. In accordance with the Act and the Decree, the competent Minister issues an Ordinance on the classification of ports for each county. The classification of ports open for public traffic is of great importance for the organisation of the entire port system, as the ports are defined according to the legal categories by the founder of the port authority, as well as the means of raising funds for the construction of port infrastructure and suprastructure.

Article 78 of the above mentioned Law (Law on Maritime Property and Seaports, 2020) defines the activities that can be carried out in the port area in ports open to public traffic, and their scope is directly determined by the port categorisation. The following activities may be carried out:

- mooring and unmooring of ships, yachts, fishing, sport, and other boats and floating objects;
- loading and unloading, transshipment, transfer and storage of goods and other materials;
- loading and unloading of passengers and vehicles;
- other activities that are directly related to these activities in economic, transport or technological terms.

Before the status of an individual port is determined and a decision is made on its categorisation, ports must meet the conditions set out in the Decree on the conditions that ports must meet, 2004. It prescribes the possibility of safe navigation, mooring, anchoring, stay of vessels, and protection of the sea from pollution by ships.

In each county, there are other legal regulations that determine the classification and development of seaports, but in this part of the paper, the regulations that affect all ports of county and local importance in the Republic of Croatia are analysed.

2.2. Strategic Documents Governing Port Development

Strategic documents are the starting point for the development of any economy, company or port. They are created as a result of strategic thinking and they set priorities, taking into account the limited resources available, encouraging cooperation between the public and private sectors in the form of working groups and clearly expressing the objectives and visions. (Dusenbury P. et al., 2004). National Plan for the Development of Ports for Public Traffic of County's and Local Importance (Planet s.a.– Eufondia d.o.o. – Rogan associates s.a, 2016.) lists the strategic documents adopted at the national and international levels that establish the basic guidelines for port development.

In addition to the aforementioned international documents, it is important to mention the Sustainable Development Plan 2030, including the Sustainable Development Goals (SDGs), for which the International Maritime Organization (IMO, a specialised agency of the United Nations) is responsible for. Its responsibilities include standards for safe, clean, and efficient maritime transport (IMO SDG Brochure, 2015). The Port's Global Sustainability Program considers the 17 Sustainable Development Goals (SDGs) as a unique and indivisible guide for the Port's sustainable development (Areas of Interest—World Port Sustainability Program). However, in this paper the authors will focus more on national documents and the presence of the stated goals and guidelines thereby contained. The analysis of the above-mentioned strategies shows that the objectives and measures of the national documents are more precise and specify in more detail what is to be achieved by each type of port than the international documents. International strategic documents are much more comprehensive and provide general objectives that serve as guidelines for the creation of the national strategic documents. However, considering the diversity of Croatian ports and their development predisposition, even the national documents do not seem to pay enough attention to the development of ports of county and local significance.

The analysis of the county's strategic documents show that the objectives and guidelines are somewhat more focused on the development of the region seaports, but this is still insufficient in the opinion of the authors. The given guidelines and objectives need to be more concretely formulated in the master plans for the development of the counties and the local ports of each county, and adapted to the specific requirements of each region.

Table 1.

Strategic documents important for the business and development of seaports.

EUROPEAN AND NATIONAL STRATEGIC DOCUMENTS IN THE MARITIME SECTOR

Marine Strategy Framework Directive 2008/56/EC

Strategic goals and recommendations for European transport policy until 2018

Operational program competitiveness and cohesion 2014 – 2020

Green book on seaports and maritime infrastructure

White paper - Plan to a single European transport area - The path towards a competitive transport system in which resources are efficiently managed

Maritime development strategy and integral maritime policy of the Republic of Croatia for the period 2014 – 2020

Strategic plan of the Ministry of the Sea, Transport and Infrastructure 2019 – 2021

Transport Development Strategy of the Republic of Croatia (2017 - 2030)

Strategy for the development of nautical tourism in the Republic of Croatia for the period 2009-2019

National Plan for the Development of Ports for Public Traffic of County's and Local Importance

National Strategic Plan for Development of Fisheries of the Republic of Croatia 2013

National Strategic Plan for Aquaculture Development 2014-2020

National Plan for Island Development 2021 - 2027

Strategic Framework for Marine Environment and Coastal Area Management of the Republic of Croatia

3. THE IMPORTANCE OF SPATIAL PLANS FOR THE DEVELOPMENT, PLANNING, AND FORMATION OF PORTS

Spatial planning is necessary to create the conditions for improving the economic, social, natural, cultural, and ecological starting points of sustainable development in a given area. Spatial plans are the main instruments for the implementation of the state's spatial planning policy at the national, county, and local levels, and their importance derives from the legal regulations, the most important of which being the Spatial Planning Act (Spatial Planning Act, 2020). It is necessary that the subordinate spatial development plans be harmonised with the higher-level spatial development plans, i.e. that the spatial development plans of cities or municipalities elaborate in more detail the provisions of the county spatial development plan, i.e. the plan for a larger area.

The spatial plan of each county prescribes the following (Spatial Planning Act, 2020):

- Conditions for the implementation of interventions in the space for public, social, and other buildings of local or county importance
- Conditions for the implementation of interventions in the space of regional importance which, according to the

special regulations governing construction, are not considered construction and

- Guidelines for the development of urban development plans on separate construction areas outside settlements for economic and public purposes of regional importance.

The process of adopting spatial plans is very important, but also an extremely complex process that should be based on the principles of integrity and systematicity. The adoption, as well as any amendment or addition to spatial development plans, is preceded by the identification of such a need in the program of measures to improve the situation in the area, a public hearing, and the obtaining of various consents and opinions required by the Spatial Planning Act, 2020.

4. CONCEPTUAL PLANS FOR DEVELOPMENT OF SEAPORTS AND PROPOSED CLASSIFICATION CRITERIA

In this part of the paper, the functional development directions of seaports resulting from the theoretical directions are analysed. Taking into account the above-mentioned regulations and documents, as well as the theoretical starting points of port development, the classification criteria for seaports are formulated.

4.1. Methodological Approach - Theoretical Directions of Development

The development of ports and port systems, and particularly the development of ports of county and local importance, is based on consideration of their developmental role in the overall economic and social life of the region and local community. Such approach to the direction of development through the role of the port in the totality of economic and social development requires planning the development of the port in accordance with the planned economic development of the surrounding area, as well as social expectations.

The basic functional development directions of ports open to public transport of county and local importance, i.e. the main directions of port development in the function of improving the development of the local and broader regional community, may be as follows: (University of Rijeka, Faculty of Maritime Studies, 2016)

- port in the function of public long-coastal line transport, including air transport;
- port in the function of community needs (communal moorings);
- port in the function of fishing (fishing moorings);
- port in the function of nautical tourism (nautical berths, annual and/or transit);
- port as a key point (connection) on the transport route;
- port as the center of an urban place (cultural and historical heritage);
- port in industrial function.

The port in the function of public long-coastal liner transport, including air transport, is a functional direction of development of ports open to public transport of county and local importance, aimed at the development of scheduled public transport of passengers by coastal line passenger transport, that is, by scheduled air transport by seaplanes. This role of the port, i.e. its direction of development, refers to investments in the development of the port that meet the technical-technological and organisational requirements of the development of coastal line passenger transport between coastal and island locations by ships and seaplanes.

The port in the function of communal needs assumes the satisfaction of the needs for communal connections, in the first place of the local population, referring to the direction of development that links all those other activities that are closely related to the life and work of the local population by the sea and on the sea, that is, the exploitation of the coastal area and the sea.

The port in the function of fishing undertakes meeting the needs of local professional fishermen for moorings and accompanying port services in the function of providing

adequate accommodation and maintenance of fishing vessels, as well as transshipment of fish and other seafood.

The port in the function of nautical tourism is a functional development direction, primarily aimed at providing infrastructural and suprastructural support for the accommodation of nautical vessels and additional support services for boaters, berth users, with the aim of creating a higher level of added value of the port itself, as well as its surroundings, i.e. the tourism economy.

The port as a key point (connector) on the transportation route refers to the development direction aimed at connecting the land and island road system with ro-ro vessels. In this functional development role, the port is primarily focused on meeting the needs of regular scheduled ro-ro liner traffic connecting the major land routes overseas, as well as the development of additional port and other services aimed at meeting the needs of passengers while they wait for their transportation.

The port as the center of an urban place, that is, the port as the cultural and historical heritage of an urban place, refers to the direction of development and the functional role of the port determined by the need to preserve the way of life of the local population. It is closely related to the port, which is both the centre of the urban place and one of the key points of social life, both in terms of the vision and functional integrity of the place and in terms of the broader social context of the life and work of the local population.

The industrial function of the port is related to its general development, which aims at meeting the needs of local and regional industry, especially manufacturing. In this sense, the development of the port can be considered as a connection point between sea and land transport for the delivery of raw materials and the removal of products.

The above seven basic directions of development of ports for public transport of county and local importance represent possible theoretical orientations and the so-called "pure" theoretical directions of port development and specialisation.

4.2. Identification and Formulation of Classification and Development Criteria

To facilitate the selection of each development scenario, it is necessary to define criteria relevant to the development of seaports in region. Once the criteria have been defined and elaborated, it is necessary, for the sake of objectivity in the selection of a particular development scenario, to carry out an evaluation of the ports. However, this is not the subject of research in this paper: the authors plan to address this in another scientific article and apply the evaluation to specific ports. This scientific paper simply provides an overview of the relevant

criteria and describes the process itself that can be used to create a port development plan of county and local importance.

In establishing the criteria for port development, it is important to note that a distinction must be made between criteria for classifying ports and criteria for evaluating port development possibilities. Port classification criteria are based on the assessment of the current condition and are accordingly

classified into a specific category, while port development criteria define the future directions of their development. The conducted port classification can also show which elements need to be improved, introduced or changed in order to qualitatively define a certain standard of a particular port. It can be concluded that classification precedes the preparation of port development plans/scenarios. This is also illustrated in Figure 1.

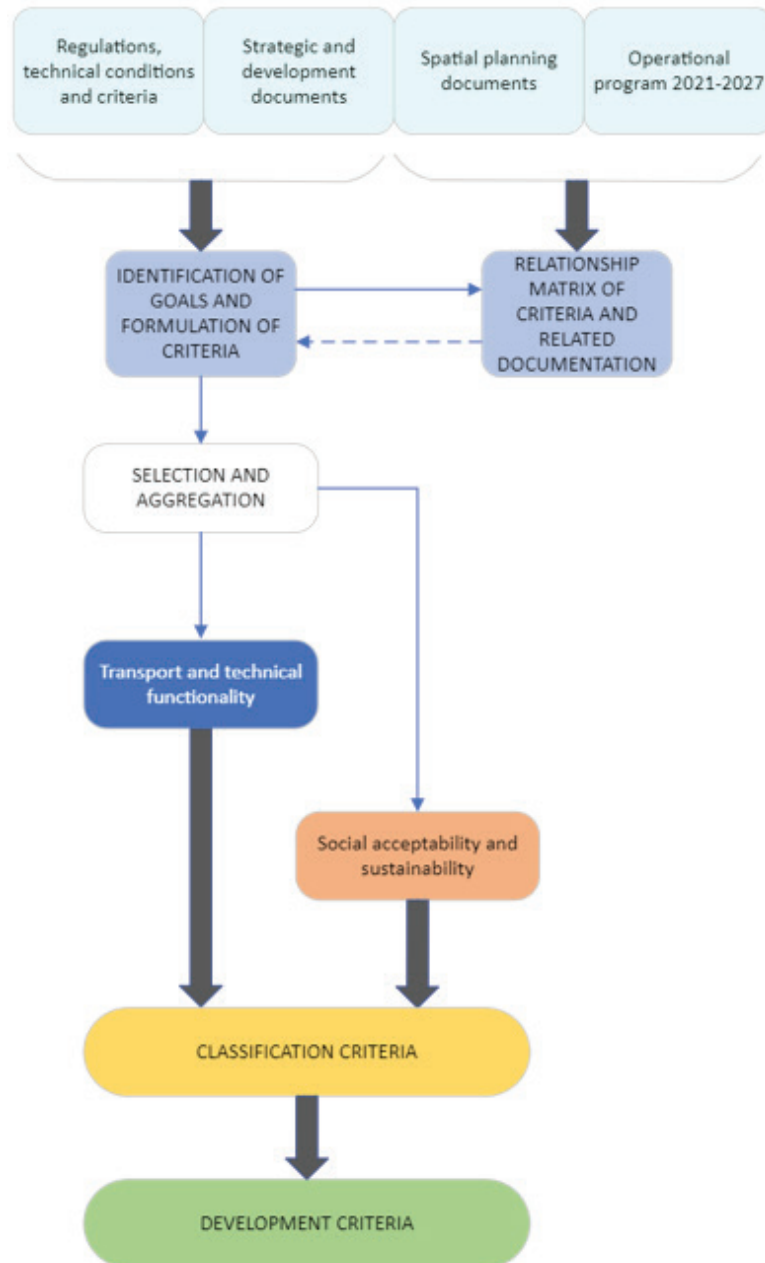


Figure 1. Methodological approach to determining classification and development criteria.

The key elements for the classification of existing ports are undoubtedly: the current functional condition and technical quality of port buildings and facilities, as well as the transport technical conditions for connecting islands and island towns to the mainland. The following characteristics of county and local ports are their influence on the concentration of economic and social activities in urban centres and the environmental protection needs of the individual localities in which they are located. In addition to the fulfilment of transport and technical requirements, socio-economic criteria must also be included in the classification. In order to evaluate both sets of criteria, relevant strategic documents and regulations related to maritime transport and the transport systems, ports and port activities, coastline transport, nautical tourism, fisheries, and development and spatial planning documents have been analysed in the previous chapters. Based on the analysis of these documents, the criteria in each of these documents have been identified as best describing and linking the key conditions and objectives identified in these documents. Below is a detailed overview of the development criteria that relate to each of the above documents.

It should be noted that the authors believe that it is not appropriate to use the same criteria for determining the development potential of county and local ports as it is for classification. The criteria should be reorganised and the potential of each port within the maritime transportation system of each county should be evaluated, both qualitatively and quantitatively, taking into account regional and local characteristics.

4.3. Classification Criteria Relevant for the Development of Seaports of County and Local Importance

The classification criteria relevant to seaport development can be summarised into two basic groups that describe the general goals and direction of public transportation port development of county and local significance, namely:

1. transport and technical functionality
2. social acceptability and sustainability.

The first group of criteria describes the existing capacity, the condition of port buildings and the level of port services, i.e. the potential to increase the quality of transport access, the reception of vessels and passengers and the general functionality of the port.

The second group of criteria describes the security and environmental aspects in the port and the specifics of the spatial definition in terms of development opportunities and the required level of protection. The classification criteria relevant to the development of seaports of county and local importance are (Planet s.a.– Eufondia d.o.o. – Rogan associates s.a, 2016., str. 60) may be listed as follows:

1. Transport and technical functionality:
 - a. Transport connectivity

- b. Transport capacity
 - c. Availability of port infrastructure
 - d. Quality of basic port infrastructure
 - e. Quality of additional port facilities
2. Social acceptability and sustainability:
 - a. Security and protection of the port area
 - b. Ecological equipment of the port
 - c. Port location

Transport connectivity describes the importance of the port in providing transport connection between the mainland and the islands, between the islands themselves, and with other ports in the wider area. Given the characteristics of the port, this primarily involves passenger and vehicle transport. Under this criterion, the quality of the port's connection to the road network, i.e., its accessibility from the land side.

Transport capacity describes the ability of the port to meet a certain level of traffic demands. Given the different stakeholders and specific requirements for moorings, it is necessary to establish separate benchmarks for evaluating municipal capacity, fishing, and nautical mooring, as well as land mooring for accommodating public transport vessels.

The availability of basic port infrastructure evaluates the provision of the port with basic elements and accessibility for certain categories of vessels. In particular, this criterion evaluates the presence of utility connections at berths, such as water, electricity, hydrant network, and the presence of public lighting being particularly evaluated.

The quality of basic port infrastructure combines sub-criteria describing the technical and functional condition of port buildings and facilities, as well as the quality of access for people and vehicles to the coast and to port berths.

The capacity of additional facilities describes the quality of the port through the availability of land areas within the port area and is used for additional port services. Within this criterion, the availability of dedicated parking near the port for the needs of people using port services must also be taken into consideration.

Safety and security are the basic criteria for evaluating the level of safety, primarily of maritime traffic, and assessing the possible risk of an accident at sea. The safety of navigation in the port and anchorage, as well as the sea depth, are classified under this criterion.

The ecological equipment describes the quality of the port from the point of view of environmental protection and pollution risk. The possibility of picking up the liquid and solid waste produced on board through the port equipment with special devices is also evaluated.

The location of the port shows the social importance of the port. Here, the attractiveness of the port is evaluated in terms of its geographical location, its connectivity to the urban and economic centres of the county, and its importance in protecting the environmental values of the port and the port

area. At the same time, consideration must be given to the port's interconnectedness with the port and the larger economic centres, the application of the principle of polycentricity, and potential spatial conflicts, i.e., the inconsistent use of common spaces in the port for different purposes.

The relationship between the criteria and the relevant documents analysed in the previous chapter is illustrated in Table 2. It shows the representation of each criterion in the documents mentioned above: regulations, plans, and strategies. For each

of the mentioned criteria, sub-criteria must be developed and assigned a specific numerical value according to their importance. It should be noted that the criteria hereby primarily represent classification criteria and that the development criteria, although included in two basic groups (transport and technical functionality and social acceptability and sustainability), are not presented as such in the matrix. The development criteria are more focused on improving and enhancing the existing situation in the port. Some of the criteria that are important for

Table 2.

Matrix of the relationship between classification criteria and associated documentation.

REGULATIONS, STRATEGIC DOCUMENTS, PLANS	Decree on the conditions that ports must meet	Order On Criteria For Determining The Purpose Of A Particular Part Of The Port	Order On The Conditions And Manner Of Main-taining Order In Ports	Rulebook On The Conditions And Method Of Putting Fish Into The Sea	Act On Liner Shipping And Seasonal Coastal Maritime Transport	Maritime Development Strategy And Integral Maritime Policy Of The Republic Of Croatia	Transport Development Strategy Of The Republic Of Croatia	Operational Program Competitiveness And Co-hesion	Development Strategy Of The County	Spatial Plan	Strategy For The Development Of Nautical Tourism In The Republic Of Croatia	National Strategic Plan For Development Of Fisheries Of The Republic Of Croatia 2013
CRITERIA												
Transport connectivity		x			x	x	X					x
Transport capacity	x					x		x	x	x	x	x
The availability of basic port infrastructure	x	x	x				X	x	x	x	x	x
The quality of basic port infrastructure	x	x	x	x								x
The capacity of additional facilities	x	x							x	x	x	
Safety and security	x		x									
The ecological equipment	x	x	x						x	x		
The location of the port		x						x	x	x		

the development planning and evaluation of an individual port are not even addressed in the documents mentioned (weather influences, hydrological and geological conditions in the port area), but due to their importance they must nevertheless be included in the evaluation system.

5. PORT CLASSIFICATION PROCEDURE AND DETERMINATION OF PORT DEVELOPMENT DIRECTIONS

In this part of the work, the process of classification of the port itself is explained, upon which the directions of development directions and the possibilities of forming and implementing the development scenario are defined. Based on the previously

explained criteria, it is necessary for them to be identified and elaborated, as well as analysed and evaluated according to the regional area. In addition to the strategic documents, regulations and laws issued at the national level, each region, i.e. each county in the Republic of Croatia, issues specific documents related to the areas it manages. In accordance with the above rules and in implementation of the conclusions reached, it is necessary to assign weights to the groups of criteria depending on the estimated importance of the group. When assigning weighting percentages, the functions that the ports have in the regional area should be taken into account and harmonised with the objectives set in the county documents and strategic spatial planning documents.



Figure 2.

Procedure of classification and determination of development directions and scenarios.

By applying multicriteria decision-making methods, it is possible to determine the positive and negative effects of certain criteria on the ports included in the analysis. The obtained results can be used as guidelines for improvements that an individual port could apply to rank higher in the overall port system. Ports with better traffic and connectivity to urban centres will have higher scores, while ports that are not performing their functions and duties as they should will have lower scores. Some of them may not have a given basic mission, therefore more attention should be paid when determining their development direction.

Before determining the development direction of the port, the applied classification criteria should be supplemented with development criteria. Development criteria can be used in such a

way that the two basic groups of criteria (transport and technical functionality and social acceptability and sustainability) are completed with the additional sub-criteria.

As has been explained in the previous chapter, the main directions of port development in the function of improving the development of the local and broader regional community are the following: the port in the function of long-shore public transport, including air transport; the port in the function of community needs (communal moorings); the port in the function of fishing (fishing moorings); the port in the function of nautical tourism (nautical moorings, annual and/or transit traffic); the port as a key point (link) on a transport route; the port as the centre of an urban place (cultural and historical heritage); and the port in an

industrial function. The above seven directions of development of ports of county and local importance represent the theoretical guidelines for the development and specialisation of ports. The main task is to determine to which of the above groups each port belongs. It is important to emphasise that a port does not need to have only one function or belong to one category.

Considering the practical circumstances and comprehensiveness of life and work of the local and regional environment in which the ports are located, as well as the different levels of necessary investments in the port infrastructure and superstructure, four directions of development can be drawn and generalised, which are more or less a collection of different combinations of the previously mentioned seven theoretical directions of development, i.e. they sublimate the

aforementioned seven theoretical directions of development into four practical scenarios of development (University of Rijeka, Faculty of Maritime Studies, 2016):

- Scenario 1: Development to provide transportation access and liner public passenger transportation, including air transportation;
- Scenario 2: Development focusing on tourist activities and ensuring access to nautical tourism vessels;
- Scenario 3: Development focused on traditional activities and ensuring a higher quality of services for the local population;
- Scenario 4: Development in the function of protecting the natural cultural-historical values and the environment ("Do nothing scenario").

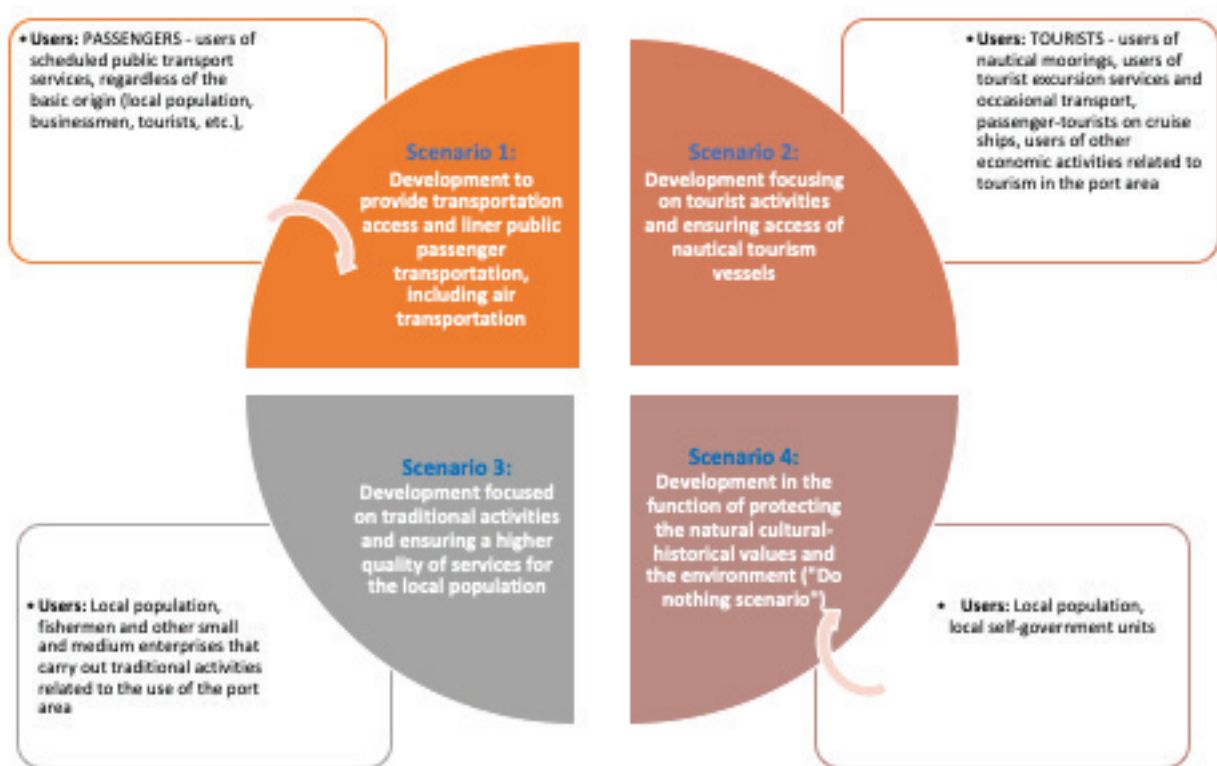


Figure 3. Scenarios for the development of seaports of county and local importance for the Republic of Croatia.

Which of the above development scenarios will be chosen for the development of a particular seaport largely depends on the end users of that port, that is, on the users of port services. The following are the major groups of end users, depending on the above development directions/scenarios (University of Rijeka, Faculty of Maritime Studies, 2016):

- Scenario 1: PASSENGERS - users of scheduled public transport services, regardless of the basic origin (local population, businessmen, tourists, etc.)
- Scenario 2: TOURISTS - users of nautical moorings, users of tourist excursion services and occasional transport, passenger-tourists on cruise ships, users of other economic activities related to tourism in the port area

- Scenario 3: Local population, fishermen and other small and medium enterprises that carry out traditional activities related to the use of the port area

- Scenario 4: Local population, local self-government units.
The existing legal regulations allow the implementation of several different development scenarios in one port, but then it is necessary to zone the port or divide it into individual basins in terms of users.

Depending on the development roles and the functional direction of the port, in view of the four defined development scenarios, and taking into account the overall evaluation of the development potential and the "product" of each port, it is possible to establish the basic evaluation parameters that will be unique and applicable to all ports included in the analysis.

6. DISCUSSION AND CONCLUSION

In the previous research, scientists have proposed a number of ways to classify seaports. However, there is still no single method that adequately covers their development possibilities. The lack of clear criteria for determining the similarity of ports, on the basis of which their development directions could then be proposed, as well as the inconsistency of national and county plans and regulations, requires each region to be approached in its own way. In addition to the uniform criteria at the national level, the criteria at the regional level need to be elaborated and specified.

In this scientific paper the authors have analysed documents relevant for the formation of classification and development criteria of seaports in individual regions, i.e. counties of the Republic of Croatia. In addition to international and national documents and laws, each county or ports in its territory are affected by additional regulations, spatial plans, and strategic documents that all take into account the characteristics and peculiarities of the area in which they are located. The classification criteria defined in this paper derive from the analysis of the mentioned documents and regulations, both at the international and national levels, as well as at the level of individual regions or counties of the Republic of Croatia. With their implementation, ports can be classified into certain groups as prescribed by legislation requirements, but without specifying what they are. Depending on the group in which they are classified, the amount of further investment in their development can be determined.

The classification of the ports in a certain area is a step that precedes the determination of their development directions. It is necessary to approach the development in a systematic and meaningful way, respecting the functionality and the development potential of each port, as well as the demand of the end users for the services they offer. In this work, taking into account the directions of development derived from the theories,

the authors have proposed four generalised development scenarios that can be offered to all counties of the Republic of Croatia. The development scenarios, as described above, specify and unify various functional directions of development, providing the possibility of their application in practice. With this approach, it is possible to identify the characteristics and development directions of the area in the immediate vicinity of the port, which could consequently contribute towards a better performance of certain economic activities, directly and indirectly related to the ports themselves.

In future research, it is possible to further develop the existing classification criteria using sub-criteria and define the development criteria of the ports. By assigning a value to each of the criteria and sub-criteria, it will be possible to determine the level of development of the port in the geographical area analysed and, depending on the category to which it belongs, to establish development guidelines and the need for additional financial investment.

CONFLICT OF INTEREST STATEMENT

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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