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ICTTE Belgrade 2016 has been jointly organized by the City Net Scientific Research Center Ltd. Belgrade and University of Belgrade, Faculty of Transport and Traffic Engineering. ICTTE Belgrade 2016 has been co-hosted by the AIIT (Associazione Italiana per l'Ingegneria del Traffico e dei Trasporti) Research Center, Rome, Italy and UITP (International Association of Public Transport) and has been organized under the auspices of the Italian Society of Transportation Infrastructures (SIIV – Società Italiana di Infrastrutture Viarie). The conference is held in Belgrade, Serbia, from 24th to 25th November 2016.

The conference covers a wide range of topics related to traffic and transport engineering, with the aim of representing the importance of all modes of traffic and transport, especially the importance of improving these industries, and their compliance to one of the most significant principles nowadays, sustainable development. ICTTE Belgrade 2016 gathers researchers, scientists and engineers whose fields of interest are traffic and transport engineering, and should provide them a good platform for discussion, interactions and exchange of information and ideas. ICTTE Proceedings have been indexed within Thomson Reuters's CPCI – Conference Proceedings Citation Index accessed via Web of Science.

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PREFACE

Each year billions of Euros are spent globally in order to develop, manufacture, operate and maintain transportation systems and vehicles. However, each of these processes begins with scientific research which contributes to modern life principles.

Paralleling the spurt of work on new transportation principles, there has been renewed attention to their influences on mobility, economy, safety, security, urban planning, pricing, environmental protection, etc.

Keeping in mind our main scientific gain - to learn, discover and spread our knowledge to the new generations, I would like to believe that International Conference on Traffic and Transport Engineering - ICTTE2016 has a new role not just to connect among ourselves or our institutions, but to encourage each of us to share the great knowledge and years of dedicated work.

Moreover, I would be sincerely proud if this journey via different modes of transportation could be replaced by communication and information flows through our scientific network.

This proceedings is a result of the work of over 200 researchers from more than 30 countries worldwide and I wish you pleasant reading of selected topics.

ICTTE 2016 Director

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THE STATUS OF VESSELS FOR SPORT AND RECREATION IN THE CROATIAN AND MONTENEGRIN LEGISLATION AND MEETING THE REQUIREMENTS OF NAVIGATION SAFETY IN NAUTICAL TOURISM PORTS

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Abstract: Nautical tourism on the Adriatic Sea represents a particularly significant sector of maritime and tourist activities. The safety of sport and pleasure boats guarantees successful performance of nautical tourism activities. An increasing number of these boats sailing in the Adriatic Sea is important for the overall economic development of the Republic of Croatia and the Republic of Montenegro. In Croatia, sport and pleasure boats are regulated by the Maritime Code, the Ordinance on Boats and Yachts and a number of subordinate legislation acts, while in Montenegro they are regulated by the Law on Yachts, the Law on Safety of Maritime Navigation, the Regulation on Boats and other subordinate legislation. These regulations govern the conditions for navigation, the area of navigation, seaworthiness of yachts and boats, procedure and conditions for acquiring qualifications and certificates for boat leaders, yacht masters and skippers. This paper puts special emphasis on regulatory laws on yachts, sport and pleasure boats, as well as on requirements that must be met in ensuring the safety of navigation. According to the broadest definition, a yacht is a boat designed and equipped for long sea voyages, and it is used for sport and pleasure. However, more detailed analysis indicates inconsistency in legislative terminology of the two systems, such as the definition of the term "yacht". The same applies to the term "boat". It can therefore be concluded that there are certain differences in the Croatian and Montenegrin legislation, and in this respect the paper will also provide *de lege ferenda* solutions.

Keywords: sport and pleasure boats, yachts, sailing vessels, nautical tourism, nautical tourism ports, safety of navigation.

1. Introduction

The Adriatic Sea is a bay deeply cut into the mainland of the Mediterranean between the Balkan and the Apennine peninsulas stretching in the south-east and north-east directions. It occupies an area of 138,595 km^2. The total length of coastline (mainland and islands) is 7912 km, and the indentation coefficient is 6.1. A part of the eastern Adriatic coast from the mouth of the river Dragonja to the middle of the entrance to the Bay of Kotor belongs to the Republic of Croatia, and the part of the coast from the middle of the entrance to the Bay of Kotor to the mouth of the river Bojana belongs to Montenegro.
Highly developed coast of Croatia is 5,835 km long, which is 74% of the total length of the Adriatic coast. There are 1,244 islands, islets and rocks and 4,398 km of the coastline length estimate belongs to the coastline of islands. The indentation coefficient of the Croatian coast is 11, which makes it one of the most indented coasts in the world. The total length of the Montenegrin coast is 260 km, which represents 3.3% of the total length of the Adriatic coast. Number of islands, islets and reefs is 48. The coefficient of indentation of the Montenegrin coast is 3. The surface area of the Croatian part of the Adriatic sea is 31,067 km^2, and of the Montenegrin part is 2099 km^2.
The Adriatic Sea affects a way of life which is very similar among the inhabitants of the coastal areas of Croatia, Montenegro, Italy and Albania. Regardless of the length of the coast, Croatian and Montenegrin coasts are considered to be very suitable for nautical tourism, a part of industry that contributes significantly to the economic development of both countries. Nautical tourism is a form of tourism with distinctive features which significantly distinguish it from other forms of tourism, and particularly because of the models of management of maritime domain and navigation safety systems at sea.
Nautical tourism means navigation and accommodation of tourists – navigators on cruising vessels and in nautical ports for the purpose of rest and recreation. Although nautical tourism is an integral part of the tourist industry, it is a highly interdisciplinary phenomenon and therefore, we can say that nautical tourism is an interdisciplinary tourist phenomenon containing a maritime component. (Luković et al., 2015) The essential difference between nautical tourism and other forms of tourism is in sailing and great mobility of nautical tourists, which involves frequent and often daily change of residence.
The positive effects of nautical tourism are of great importance in the development of the economy, not only for obvious economic effects, but also the fact that tourist consumption contributes considerably to the growth of relatively small national markets of Croatia and Montenegro enabling, so-called, *invisible exports*. In addition to all positive effects of nautical tourism there are negative ones which are reflected primarily in the use of external environment for infrastructure development, as well as short seasonal presence of a large number of tourists in a particular area and the increased number of sailing vessels, which enhances the number of maritime accidents during the summer months (*Development Strategy of Croatian Nautical Tourism*).

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2. Nautical tourism legislation

As stated at the beginning, nautical tourism is a part of the tourist industry with a significant maritime component. (Luković et al., 2015) In nautical tourism, tourist services are mainly provided in the ports of nautical tourism and on board nautical tourism vessels. The nautical tourism ports and waterborne craft are classified into types, and certain types are categorized. Different kinds of subordinate legislation govern the types and categories of nautical tourism ports and vessels, the minimum requirements to be met by such ports, as well as the categories and methods of categorization of ports and vessels of nautical tourism.
In Croatia, nautical tourism activities are governed by several laws and regulations. Two basic legal regulations are *the Maritime Code* and the *Act on the Provision of Tourism Services.* Apart from those, it is necessary to point out *the Maritime Domain and Seaports Act.* Subordinate legislation governing nautical tourism includes *the Ordinance on Boats and Yachts, the Ordinance on the Classification and Categorization of Nautical Tourism*, the *Ordinance on the Types and Categories of Vessels of Nautical Tourism, the Ordinance on the Conditions to be met by Vessels, and Natural or Legal Person Performing the Activity of Leasing Vessels, the Regulation on Conditions for Leasing Vessels with or without Crew and Offering Accommodation Service on board Vessels*, *the Regulation on the Classification of Ports Open for Public Transport and Ports for Special Use*, *the Decree on Conditions that Ports Must Meet* and *the Regulation on Conditions for the Arrival and Stay of Foreign Yachts and Boats Intended for Sport and Leisure in the Internal waters and Territorial Sea of the Republic of Croatia*.
In Montenegro activities in nautical tourism are also regulated by several laws and regulations. The main statutory requirements are *the Law on Yachts, Port Law, the Law on Maritime Domain, the Law of the Sea, the Law for the Prevention of Pollution from Ships and the Law on Safety of Maritime Navigation.* Subordinate legislation governing nautical tourism includes *Regulation on smaller boats, Regulation on Conditions that must be met by Ports Classified according to the type of Maritime Traffic* and *Purpose* and *the Decision* on *Determination of Ports according* to *Significance.*

3. Categorisation of ports and vessels of nautical tourism

As previously stated, the two basic components that make up the nautical tourism are the nautical tourism ports and nautical tourism vessels.

3.1. Nautical tourism ports

3.1.1. Croatia

According to Art. 2, para. 1, pt. 1 of *Maritime Domain and Seaports Act*, in the broadest sense, a port shall mean a seaport, i.e. water space and the land space with developed and undeveloped coast directly connected with sea space, as well as breakwaters, installations, plants and other facilities designed for landing, anchoring and protection of ships, yachts and carrier boats, embarkation and disembarkation of passengers, loading and unloading of goods, storage and other handling of goods, manufacturing, refinement and finishing of goods, as well as other economic activities in economic, traffic and technological relation with these activities.
Furthermore, according to their purpose, ports are divided into ports open for public transport and ports for special use. Both types of ports can be ports open for international transport and ports open for domestic transport. According to the activities carried out by the ports for special use they can be divided into: naval ports, nautical tourism ports, industrial ports, shipbuilding ports, as well as sports, fishing and other type of ports for similar purposes. By their importance for the Republic of Croatia, the special purpose ports are divided into: ports of importance for the Republic of Croatia, and ports of county importance.
Nautical tourism activities take place in the ports for special use primarily nautical tourism ports and ports intended for sports. A nautical port mainly serves for reception and accommodation of cruising vessels and it is equipped for provision of services to clients and vessels. From business, construction and functional aspects, it makes an integral whole. Nautical tourism ports are functional business units in which a legal or natural entity operates and provides tourist services in nautical tourism and other services in the area of tourist spending (trade, catering, etc.). Accordingly, the ports of nautical tourism are tourist facilities in which, apart from communication services, a variety of other additional services are provided, such as accommodation and catering for boaters, maintenance and repair of vessels, supply of spare parts, food and hygiene products supply, and recreational and all other services that navigators need. (Šamanović, 2002) Sports ports are ports used for berthing of sailing vessels registered in the Croatian Register of sailing vessels intended for sport and leisure, and owned by association members, or by the same association which has a concession contract for the port.
Nautical ports of importance for the Republic of Croatia are those that have a capacity of 200 berths and more, and those of importance to a county are the ones that have a capacity of up to 200 berths in the sea. Sports ports of importance for the Republic of Croatia are those that have a capacity of 200 berths and more, and of importance to a county are those that have a capacity of up to 200 berths.

Reception facilities for sailing vessels are located in nautical tourism ports and at nautical berths in the ports open to public transport. Nautical berths can be a year-round, seasonal and transit. Receiving capacity is on a year-round and seasonal basis. Boat reception services include leasing of permanent and transit berths.
The Regulation on Classification and Categorization of Ports for Nautical Tourism prescribes the types, minimum requirements, categories and method of categorization of nautical tourism ports. Nautical ports, according to the type of services they provide in the port, are divided into: anchorage, cruising boat storage, dry marinas and marinas. *Anchorage* is a part of the sea or water area suitable for anchoring of sailing vessels, equipped with equipment for safe anchoring. *Storage of sailing vessels* is a part of the land fenced and equipped for rendering services of sailing vessels storage on land, and the provision of services of transport of boats, their launching and taking out of the sea. This type of *Storage of sailing vessels* does not provide accommodation for tourists and it is not used for preparing sailing vessels for their voyages. *Dry marina* is an area fenced and arranged for providing the storage of sailing vessels on dry land and they also provide the services for their transport, launching and taking out of the sea. A *dry marina* type can offer accommodation to tourists, as well as services for preparing sailing vessels for their voyages. *Marina* is a part of water and shore area specially built and equipped for providing services of communication, accommodation of tourists on board sailing vessels and other services.
Marinas are the only type of nautical tourism ports that are categorized. The category of marina depends on the fulfilment of the conditions laid down for each category in the *The Regulation on Classification and Categorization of Ports for Nautical Tourism*: quality of equipment and facilities, standard of basic services, diversity of additional services offered to tourists at the marina, as well as other services and facilities at disposal to tourists in the immediate vicinity of the marina and the quality of maintenance of the marina as a whole. Marinas are awarded anchors for each category. They can have: two, three, four or five anchors.

3.1.2. Montenegro

According to Art. 4, par. 1, pt. 5 of *Law on ports*, a port is defined as the sea and a shore area directly connected to the sea with constructed and non constructed quays, piers, breakwaters, buildings, installations and facilities intended for the provision of port services and performance of other activities regarding the economic, traffic or technological matters. Furthermore, according to their purpose, ports can be divided into: commercial ports, nautical tourism ports - marinas, shipbuilding ports and fishing ports. According to the types of maritime transport, ports are divided into ports open for international and for domestic transport.
According to their significance, ports are divided into ports of national significance and ports of local significance. *The Decision* on *Determination* of *Ports according* to *Significance* individually determines the ports of national and of local significance.
The nautical tourism activities take place in the ports of nautical tourism - marinas. *Nautical tourism ports - marinas* are ports intended for accommodation, storage, protection, maintenance, repair, fitting out and mooring of yachts and smaller boats.
The Rulebook on Types of Nautical Tourism Facilities, Minimal Technical Conditions and their Categorization classifies the reception facilities of nautical tourism and divides them into marinas, ports and harbours, docks, berths and anchorages. *A marina* is the nautical tourism facility with naturally or artificially protected water (sea, lake and river) areas, specializing in providing communication, supply, storage, maintenance and repair of sailing vessels, catering services, boat rental services, as well as other services in accordance with the requirements and the specific needs of nautical tourists. *Ports, harbours and docks* area nautical tourism facilities that are wholly or partly designed and tailored specifically to the primary navigation needs of the nautical tourism sailing vessels (reception, berth and supply), as well as other basic living and service needs of nautical tourists (inspection and minor repairs on sailing vessels). *Berths* are specially constructed coast or the coast connected areas fitted out for reception and berthing of nautical tourism sailing vessels, with direct pedestrian access to the vessel. *Anchorages* are naturally or artificially protected sea, lake or river water area furnished and equipped with mooring gear for nautical tourism boats, without the possibility of pedestrian approach to the boat.
Of all nautical tourism reception facilities only marinas are subject to categorization. Marinas are classified according to the conditions that must be met regarding their design, equipment and types of services (mandatory elements), and other conditions and facilities at their disposal (optional elements). The classification of marinas into categories and category designation is done in a way that each single category is symbolically awarded a suitable number of boat propellers: five propellers are awarded to the first category marina, four propellers to the second category marina, three propellers to the third category marina, two propellers to the fourth category marina, and one propeller to the fifth category marina.

3.1.3. Comparative analysis

Contrary to classification of ports of nautical tourism in Croatia prescribed in *The Regulation on Classification and Categorization of Ports for Nautical Tourism,* in the publications on nautical ports, (anchorages, boat storages, dry marinas and marinas) are divided into anchorages, berths, dry marinas and marinas. Such a division is contained in *The Regulation on Classification and Categorization of Ports for Nautical Tourism* of 1999, which expired after adopting the new *Regulation* in 2008. However, the new *Regulation* in its transitional and final provisions stipulates that legal or

natural persons who on the date of entry into force of the *Regulation,* have a trade license for the port of nautical tourism in accordance with the *Regulation* of 1999, are not obliged to align with the new *Regulation*, but they may apply for classification and categorization in accordance with the new *Regulation* of 2008. According to this provision, the most of nautical tourism ports are still categorized by the previously valid categorization. Therefore, the classification that is provided in the new *Regulation* of 2008 has not yet taken hold in practice. However, this fact is not damaging considering the vagueness that has been brought by the new *Regulation* of 2008. Instead of "berth" that *Regulation* cites "boat storage*"* which is by definition very similar to a dry marina. In fact, the only difference being that the boat storage is used for the storage of sailing vessels on land where tourists cannot stay, and where it is not possible to prepare the boats for navigation, while in dry marina it is possible for the tourists to store their sailing vessels, stay there, and prepare their sailing vessels for navigation. The above shows that there is no essential difference between the definitions of these two terms. The difference is not sufficiently significant to mean specific types of nautical tourism ports, and therefore, this division is unnecessary. Although the new *Regulation* of 2008 tries to distinguish between the two, we believe that this is unnecessary and impracticable. Thus, it has been proposed to amend this part of *the Regulation on the Classification and Categorization of Ports for Nautical Tourism* and to restore the categorization as in *the Regulation* of 1999.

The analysis of Montenegrin *Rulebook on types of nautical tourism facilities, minimal technical conditions and their categorization* shows a lack of precision in defining the harbours, docks and berths, and their classification criteria are not clear. Namely, in the division itself, harbours (together with ports) are listed separately from the docks, and where each term is being defined there is a combined definition for both, *harbour* and *dock*. Although in practice there might be reasons for distinguishing these concepts, they are not adequately highlighted in *the Regulation*. Furthermore, there is no mention of differences between *marinas* and *dry marinas*, which certainly needs to be mentioned with regard to the specific protection of the sailing vessels on land. Therefore, we believe it is necessary to adopt a new division, or amend the current one in a way that each type of reception facility for nautical tourism is adequately defined.

Legal regulation of marinas, which still are the most important part of nautical tourism, has been adjusted in an adequate manner in both countries. We may just point out that in the categorization of marinas, there are differences because Croatia categorizes marinas in four, and Montenegro in five categories. However, this does not seem to make a significant difference.

3.2. Vessels

In nautical tourism there are numerous vessels of different properties and uses. Cruise ships are included in nautical tourism vessels. However, these vessels are not the subject of analysis in this article.

The common feature of all vessels in nautical tourism is that they are intended for sport and recreation. In principle, the vessels in nautical tourism are not subject to the provisions of international conventions, but are subject to local regulations as far as the safety of navigation is concerned. Therefore, it is necessary to separately analyze the Croatian and Montenegrin regulations that conceptually define vessels in nautical tourism.

3.2.1. Croatia

According to Art. 5 of the *Maritime Code*, as the basic regulation in the domain of maritime law, vessels shall be classified as ships, warships, submarines, yachts and boats. Due to the specifics of nautical tourism it is necessary to highlight the concepts of ships, boats and yachts. *Ship* is a waterborne craft designed for sea navigation, 12 meters in length and a gross tonnage of more than 15 tons, or it is authorized to carry more than 12 passengers. *Yacht* is a waterborne craft for sports and recreation, regardless of whether it is used for personal needs or business, exceeding 12 m in length and intended for a longer stay at sea, which is furthermore authorised to carry no more than 12 passengers in addition to the crew. *Boat* is a waterborne craft intended for navigation at sea, which is not a ship or a yacht, and the length of which is more than 2.5 metres or the total power of its propulsion engines is greater than 5 kW. The term boat does not encompass: vessels belonging to another maritime craft for the purpose of collecting, salvaging or conducting work, vessels intended exclusively for competitions, canoes, kayaks, gondolas and pedal boats, windsurfing boards and surfboards. If the Maritime Code does not provide otherwise, its provisions relating to ships also apply to yachts.

According to the *Ordinance on Boats and Yachts* there is a more detailed classification of vessels in nautical tourism, based on the technological characteristics of the vessel. Therefore, we have boats for personal use, boats for commercial purposes, yachts for commercial purposes, yachts for personal purposes, pleasure boats and speedboats. *Boat for personal use* is a boat for sport and leisure that is not used for commercial purposes, while *boat for commercial purposes* is a boat for transport of passengers and / or freight against payment, recreational boats for leasing, professional fishing, extraction of gravel, stone and other economic activities. *Yacht for commercial purposes* is a yacht designed for leasing with or without crew, while *yacht for personal needs* is a yacht that is not used for commercial purposes. *Pleasure boat* is a vessel of any type intended for sports and leisure that has a hull length from 2.5 to 24 m measured according to agreed standards, regardless of the type of propulsion. *Speedboat* is a boat or a yacht that slides on the surface of the sea using a mechanical propulsion device.

According to the *Ordinance on the Types and Categories of Vessels of Nautical Tourism* a vessel of nautical tourism is a ship, a boat or a yacht designed and equipped to provide tourist services in nautical tourism. Furthermore, the same *Ordinance* states that the vessels of nautical tourism shall be classified according to the type of services they provide:

craft for excursions and cruising craft. *Craft for excursions* is intended for tourist transport services for excursions lasting up to 24 hours without accommodation services. *Cruising craft* is intended for tourist transport services of cruising lasting over 24 hours, equipped for days-long stays of tourists. The craft must meet the minimum requirements established by specific regulations regarding registration in the Croatian Register, as well as the conditions prescribed by the *Ordinance*.

Every year when processing the data on the capacity and operation of the nautical tourism ports, Croatian Central Bureau of Statistics divides the vessels for leisure and sports into yachts (motor and sailboats) and other vessels. *Motor yacht* is a vessel equipped with engine intended for leisure, sport or recreation, which is according to common maritime customs, equipped with a cabin with at least two beds, a toilet and cooking facilities. *Sailboat* is a vessel intended for leisure, sport or recreation whose main power is wind. It is equipped with a cabin with at least two beds, a toilet and cooking facilities. *Other vessels* are boats (wooden, plastic, rubber, etc.) of 3 meters or more in length, or less than 3 meters if they have an engine. Speedboats are also included into *other vessels* unless they qualify for yachts.

3.2.2. Montenegro

Article 2 of *the Law on Yachts,* provides definitions for yachts, foreign yachts, foreign smaller boats, yachts for economic activity and yachts for personal use. *Yacht* is a vessel driven by engine or sail power, which can have more than one hull, designed and equipped for days-long stay at sea for pleasure, sport and recreation. It is over 7 meters in length, and it is used for personal needs or economic activities. *Foreign yacht* means a yacht flying a foreign flag. *Foreign smaller boat* is a vessel that has a foreign flag. *Yacht for economic activity* is a yacht, or a foreign yacht intended for leasing with or without crew. *Yacht for personal use* is a yacht or a foreign yacht that is not used for economic activities. This regulation does not fully define the terms since it does not give the definition of *smaller boat*, and states that the foreign smaller boat is a craft with a foreign flag. Therefore, with regard to *the Law on Yachts*, the full meaning of the term "smaller boat" is unclear.

The Law of the Sea defines, among other terms, the terms *ship* and *foreign yacht*. S*hip* is a vessel designed for sea navigation, 12 meters in length and a gross tonnage of more than 15 tons, or it is fit to carry more than 12 passengers. *Foreign yacht* is a vessel that has a foreign flag, 7 meters in length, used for leisure, sport and recreation and is suitable for days-long stay at sea.

Article 6 of *the Law on Safety of Maritime Navigation* defines the terms: *ship, boat, smaller boat and yacht*. *Ship* is a vessel designed for navigation (passenger, cargo, technical craft, fishing, public or scientific research ships), whose length is more than 12 meters and a gross tonnage more than 15 tons, or carrying more than 12 passengers. *Boat* is a vessel designed for sea navigation, 7-12 meters in length and a gross tonnage of less than 15 tons with power of less than 75 kW and fit for days-long stay at sea. *Smaller boat* is a vessel designed for navigation at sea, which is neither a boat nor a yacht, whose length is more than 2.5 meters, with engine power greater than 5 kW, including the watercraft, jet-ski , etc. In addition to the lifeboats on the vessel and smaller boats for sport competitions (canoes, kayaks, gondolas and pedal boats, surfboards and windsurfing boards) and it is not fit for days-long stay at sea. *Yacht* is a vessel intended for leisure, sport and recreation, more than 7 meters in length, which is not engaged in international navigation.

In Article 2 of the *Regulation on Smaller Boats*, the terms defined, among others, are a *smaller marine boat, smaller boat for commercial purposes, smaller boat for personal needs, speedboat, smaller sails boat, and smaller rowing boat*. *Smaller marine boat* is a craft intended for navigation at sea, with less than 12 meters in length, and registered capacity of less than 15 gross tons. *Smaller boat for commercial purposes* is a boat for the transport of passengers and / or goods against payment, fishing, extraction of gravel, stone etc. *Smaller boat for personal needs* is a boat for leisure, sport and other non-economic purposes. *Speedboat* is any boat that uses a mechanical drive device to slide on the surface of the water. *Smaller sails boat* is any boat that uses sails with sufficient surface size to move through the water. *Smaller rowing boat* is any boat which is propelled by oars.

The Rulebook on Types of Nautical Tourism Facilities, Minimal Technical Conditions and their Categorization classifies the vessels in nautical tourism and divides them into recreational craft, excursion craft, tourist yachts and tourist craft for tourist cruises. *Recreational craft* is a craft that is propelled by human power, wind or engine, used for pleasure and sports and recreation on the local reception facility of nautical tourism (smaller boat, a boat with an engine, sailing boat, water bike, surfboards, water scooter etc.). *Excursion craft* is a smaller boat or a ship used to transport tourists or day cruises with excursion facilities (hydrofoil, a smaller boat with an engine or a smaller ship for day trips, tourist taxi). *Tourist yacht* is a vessel for a longer stay of boaters at sea, with a cabin equipped with at least two beds, a toilet and cooking facilities (engine-powered yacht, wind-powered yacht). *Craft for tourist cruises* is a vessel with a crew that carries tourists for sailing and cruising, and is equipped for longer stays of crew and tourists at sea.

Yachts and craft for tourist cruises are nautical tourism vessels that are subject to categorization. Nautical tourism vessels are categorized according to the conditions in terms of design, equipment and types of services they provide (mandatory elements), and other conditions and facilities at their disposal (optional items). Classifying vessels of nautical tourism into categories and category designation is done in a way that each single category is symbolically awarded suitable number of ship propellers (screws): tourist yachts / craft for tourist cruises of the first category - three ship propellers, tourist yachts / craft for tourist cruises of the second category – two ship propellers, tourist yachts / craft for tourist cruises of the third category - one ship propeller.

3.2.3. Comparative analysis

From the aspect of safety of nautical tourism vessels, the *Maritime Code and the Ordinance on Boats and Yachts* are the most important regulations in Croatia. Their terminology should be the norm of all the other regulations and official documents. However, after examining the report of the Central Bureau of Statistics, it can be seen that the terminology used does not comply with these regulations. That is, the phrase *other vessels* includes boats of up to 3 meters in length or more, or of less than 3 meters if they have engines. Maritime legislation does not recognise the term *smaller boat* (cro. čamac), but instead, uses the term *boat* (cro. brodica) which is limited to 2.5 meters in length. By analyzing the data from the report of the Central Bureau of Statistics, it is not possible to obtain the actual facts on the types of nautical tourism vessels, and that, somehow causes the terminological ambiguity. We, therefore, believe that it is necessary to align the terminology of the Central Bureau of Statistics with the definitions of *the Maritime Code* and *the Ordinance on Boats and Yachts*.
By analyzing the definitions of vessels in nautical tourism used in various regulations in Montenegro, we can see that there is even greater inconsistency in determining the terms, and overlapping of the definitions of certain types of vessels. In *the Law on Yachts*, for example, there is the definition of *smaller foreign boat* as a vessel that has a foreign flag, and in fact, the very term of the *smaller boat* has not been defined. On the other hand, the same *Law* defines the terms *yacht* and *foreign yacht*. Thus, it can be interpreted that a smaller boat is any vessel that is not a yacht, which is not the case in any way.
Therefore, *in the Law on Yachts* it is necessary to define the general term *smaller boat* before defining the term *smaller foreign boat*. *The Law on Safety of Maritime Navigation* is less ambiguous as it includes the definitions of the terms: *ship, boat, smaller boat and yacht*. According to it, *boat* is a vessel intended for navigation, 7-12 meters in length, and a gross tonnage of less than 15 tons, with power of less than 75 kW. *Smaller boat* is a vessel intended for navigation at sea, which is neither a boat nor a yacht, whose length is over 2.5 meters, or engine power greater than 5 kW, while *yacht* is a vessel more than 7 meters in length, intended for sport, leisure and recreation. However, we believe that the term *boat* is not sufficiently clear and to some extent it overlaps with the definitions of *smaller boat* and *yacht*. It is well known that in technical terminology, the terms *boat* and *smaller boat* are used as synonyms, while according to *the Safety of Maritime Navigation* it seems that *boat* is a subtype of *yacht*, which certainly was not what the legislator had in mind. The definition of a *boat* is unclear and unnecessary, consequently, we believe that it should be removed from the legislation. Furthermore, comparing *the Law on Safety of Maritime Navigation* to *the Ordinance on Smaller Boats*, which defines *smaller maritime boat* as a vessel designed to sail, with length of less than 12 meters, and the registration capacity of less than 15 gross tons, it is obvious that there are different definitions for the same term in different regulations.
It should also be noted that the Croatian and Montenegrin regulations differently define *yacht* as a vessel for sport and leisure. According to Croatian law a yacht is over 12 meters in length and it is registered for the stay and transport of not more than 12 persons, while according to the Montenegrin regulations *yacht* is at least 7 meters in length, without limitation in the number of persons.
After analyzing Croatian and Montenegrin regulations it can be concluded that in the definitions of vessels the only properly defined term is *ship* because this type of waterborne craft is subject to international regulations and standards. The definitions of vessels used in nautical tourism significantly differ both within the national legislation and between the two countries. This should not be the case in any way given that both countries have the same factors that influence the development of nautical tourism, and a similar profile of boaters-tourists staying on the vessels of nautical tourism. One gets the impression that it favours particular interest groups, and that there is no long-term vision of the legal regulation of such significant part of the maritime and tourist activities.

4. Maritime accidents and safety of navigation in the nautical ports aquatorium

4.1. Concept and types of maritime accidents

Since its beginnings, sailing has been accompanied by various risks that have endangered the safety of persons and property. Technical and technological advances in the construction and operation of vessels have reduced, but not eliminated the risk. This has also been contributed by an increasing number of different ships and craft engaged in international and national voyages. A maritime accident or incident is an event or set of events of the same origin that causes loss or damage to the ship, yacht, boat, cargo, other property at sea, which also causes human suffering (death or bodily injury of crew, passengers or third parties). The event that causes the maritime accident should be of exceptional nature - regular losses or expenses that accompany transportation and maritime activities are not maritime accidents. Maritime accidents can be caused by hazards of the sea (*force majeure* or unexpected occurrence) and actions of people who may be members of the ship's crew, or a third party. (Pavić, 2006)
In Croatia and Montenegro, national centres and sub-centres for coordination of search and rescue operations at sea provide assistance in the event of maritime accidents. Providing assistance in the event of maritime accident depends on the type and nature of the accident itself and the characteristics of the vessel, and the circumstances in which a harmful event occurred. Therefore, in continuation of this paper the basic features of maritime accidents shall be presented, emphasising those that are common to the vessels in nautical tourism.

The collision of vessels (yachts, boats) is material impact of two or more vessels, which results in damage to at least one vessel, property or the people on board. The collision of vessels (yachts, boats) usually occurs in narrow navigable waters (straits), or where there is heavy traffic (during entry or departure). Due to their often different sizes and speed, the nautical tourism vessels frequently suffer injuries or death of a person in the event of collision. (Luković et al., 2015)
The impact is a material collision of vessels with fixed sea or land structures; the term *impact* means that there is a powerful contact of a vessel with a structure that is not considered a craft. Most frequently, vessels suffer damage during the impact.
Grounding is a marine accident when the boat with its entire keel or just a part of it touches the bottom. Grounding usually occurs due to the error of the person that is navigating a vessel, or in the event of propulsion system failures due to the influence of wind and waves. The consequence may be severe damage to the hull due to its exposure to multiple impacts at the bottom.
The penetration of water (flooding) is any unintentional ingress of water in quantities threatening the seaworthiness of the vessel. The penetration usually occurs due to external forces (waves, mechanical impact force) or due to a malfunction of equipment parts.
Sinking of the vessel is an accident in which there is a permanent or temporary loss of seaworthiness and the loss of floating ability by its being fully or partially submerged in the sea.
The fire is uncontrolled burning mostly caused by maltreatment of vessel's equipment. The main characteristic of fire is its rapid spreading which leaves very little time for its prevention. Breaking out of a large fire regularly results in complete destruction of the vessel, and its sinking if it is far from the shore or in shallow waters. (Luković et al., 2015)
Person overboard is usually a result of negligence or falling from the ship. In case of bad weather, the person in water is at great risk, especially in case of low temperatures of the sea when the survival time is significantly reduced. (Luković et al., 2015)
Pollution of the marine environment can be caused by any vessel including the vessels of nautical tourism. Certainly there is a greater danger of ships, especially tankers, due to the type and quantity of the cargo transported. However, smaller vessels also pose a threat to the marine environment primarily by fuel leakage.
It should be noted that many accidents occur due to the very low level of expertise of persons who navigate the vessels of nautical tourism.

4.2. Safety in ports and convenience of nautical tourism ports

Sailing of the vessels of nautical tourism takes place for the most part near the indented coast, with numerous islands, islets, reefs, bays, creeks and sea straits. On the one hand, sailing in such areas is very exciting and provides direct contact with the beauty of nature, and on the other hand, there are many safe havens in case of adverse weather conditions.
From the standpoint of weather conditions affecting the safety of navigation, the sailing in the Adriatic Sea on the vessels of nautical tourism can be divided into two distinct areas: sailing in the open seas and in the coastal navigation area, relatively close to the ports of nautical tourism. These two areas are different in terms of effects of weather conditions on navigation and safety procedures in case of threats to the safety of navigation.
Depending on the size of the vessel, winds, waves and other weather factors have different effects on navigation, or altering the course and speed of the vessel. At the same time, the Adriatic sea is relatively safe for nautical vessels in the summer months, while it is quite the opposite in winter when it can get very unpleasant, especially for smaller vessels. The consequence of the above are two fundamentally different traffic periods: the summer months, during which a large number of vessels sail between different destination ports, and the winter period, during which the traffic of small boats is almost negligible and therefore, adverse weather conditions have a relatively small impact on the overall safety of navigation. (Luković et al., 2015)
From the standpoint of safety of navigation, nautical tourism ports provide a sufficient level of safety of vessels at berth, both during the summer when there are frequent arrivals and departures, as well as during the winter, at a time when most of the vessels have no permanent crew engaged.
The marina offers the highest level of security for vessels at berth. It should be noted that regarding the safety, the marinas built in the area that is not naturally protected from the effects of the sea may have parts in which there may be a higher uncertainty of mooring, under particular circumstances. This refers primarily to the marinas where the impact of waves has been reduced after the construction of breakwaters and where in case of full occupancy of the marina and in the event of a major storm, boats moored near the entrance may be exposed to intensive motions in the waves producing the relevant consequences. (Luković et al., 2015)
Mooring (berth) provides a different level of security to the vessels at berth. If it is placed deep in the protected bays or within the protected part of the public or other ports, the security guaranteed to the vessels is very high, especially if vessels of appropriate size are moored, and if adequate mooring equipment is used. In case of such mooring, it is possible to have a safe stay throughout the year including the winter storage of a vessel at its berth. Of course, there are opposite examples of mooring that are fully exposed to the bad weather conditions. In such cases, the mooring is possible only during the summer period.
Anchorage generally provides a satisfactory level of safety during the summer period. During the rest of the year, when the probability of adverse weather conditions is significantly higher, the safety of boats at anchor is often questionable.

In this respect the use of anchors, as a rule, is limited to the summer months.
Traffic in the areas near the ports of nautical tourism is affected by the characteristics of each port. However, the maritime traffic in the vicinity of the ports of nautical tourism and other parts of internal waters marks the annual turnover which is most pronounced during the summer period, weekly traffic which is most intense at the end of the week (when there are crew changes on the rented boats), and daily traffic which is significantly increased during the morning hours when the boats leave the port, or in the evening when a significant number of vessels return to spend the night in the port. (Luković et al., 2015)

4.3. Maritime accidents with regard to the type of nautical tourism vessels

Properties of certain vessels are crucial to the safety of navigation and protection of the marine environment. In nautical tourism there are numerous vessels of different characteristics and purpose, thus, the threats they are exposed to are very diverse.
From the standpoint of the threats boats and yachts are exposed to, it is possible to use the classification of these vessels by size, or the major propulsion they use, as well as by the speed they can develop. The propulsion of vessels can directly affect the shape of the hull, and consequently the conduct of these vessels in navigation. As a result, there is a distinction between the motor boats, yachts and sailboats. The speed that the boat develops when moving through the water is often crucial for the safety of navigation. In this regard we should distinguish boats and fast boats.
Regular boat speed is low, rarely over 7-8 knots. The boats that are smaller in length are usually owned by the local population, and are used for short stays at sea, at short distances from the coast, and in good weather conditions. They are moored in marinas, while some of them are anchored in naturally protected bays. It should be noted that the way of mooring and arrangement of boats in (sports) ports usually do not fully meet the standards of safety for berthing and stay of the vessel as a result of insufficient number of available berths, especially in the summer months. These boats are subject to accidents (collision, crash, sinking, etc.) at the place of berth, when manoeuvring in harbours or when sailing. Usually, the accidents that happen during the manoeuvring do not lead to the loss of the vessel. There are often incidents of boats hitting shore or other vessels at berth and the mooring ropes getting entangled in the ship's screw, usually due to manoeuvring errors. Accidents happen due to insufficient space for berthing in ports, particularly with regard to the width of the fairway and the space needed for manoeuvring, or because of too many boats in the harbour. The most common navigation accidents occur due to the failure of propulsion engine, stranding as a result of bad weather and a collision. Collisions may occur at low speeds (which rarely happens in practice), and they usually do not cause greater damage to the boat. In a collision of boats, of which at least one is moving at a higher speed, more serious damage may be caused, personal injuries or even a loss of life. (Luković et al., 2015)
Fast boats (speedboats) may be constructed of reinforced fibreglass, and they are often made of rubber (inflatable boats). Their weight is small, which makes them liable to the influence of wind forces. Their draft is also small allowing an easy access to the undeveloped coasts. At the same time, because they usually do not have a keel, it is very difficult for them to maintain the course. Their usual speed is 12-35 knots. They are often used for one-day sailing trips in good weather conditions. Most of these boats do not have permanent berth in harbours or marinas, and their owners transport them by roads or in winter, leave them in dry marinas that take care of their storage. In the period of their intensive use they are moored at the places for rent, or improvised berths set up by boat owners, and most often are not sufficiently sheltered. Only a small number of these boats are engaged on a berth contract with marinas. Accidents of fast boats equally occur at the place of mooring when manoeuvring in harbours and in navigation. The accidents during the manoeuvring of these boats do not differ from the accidents which involve similar boats of lower speed. Because they often use petrol engines, there is an increased risk of fire on these boats. In navigation, accidents occur mainly due to negligence, but also because of speeding. Events of a collision or grounding at higher speed result in considerable material damage, increased risk of injury and death of crew members and passengers. The accidents of fast boats often take place in the area less than 300 meters away from the coast and primarily due to non-compliance with the rule of sailing at reduced speeds. In this way, they pose a great threat to swimmers.
Yachts of up to 15 meters in length are fast vessels, usually constructed of reinforced fibreglass, of small weight and subject to greater influence of wind forces. The ratio of their surface and submerged parts is relatively large. These boats have very powerful engines that at low rpm develop considerable speed from 15 to 35 knots. Due to these characteristics, the skipper needs sufficient space, and he is required to possess considerable skills in controlling the yacht. Manoeuvring can become particularly difficult if the wind increases the speed. These yachts are commonly used for longer cruising excursions. During the year, a significant number of these vessels use permanent berths in the marinas. As they often change the ports for overnight stay, they are considered as transit vessels in the ports where they berth. With regard to the safety of navigation, everything that has been said of the fast boats applies to yachts of up to 15 meters in length, only they require significantly greater space for manoeuvring and mooring. These vessels rarely have accidents at sea and it is primarily because of their size that they rarely approach the coast, their equipment is more sophisticated, and they have better resistance to the impact of adverse weather conditions. Fires and explosions in this group of vessels are much rarer because they mainly use diesel engines. During the mooring these yachts often hit the shore, collide with other vessels or get the mooring ropes entangled in the propeller due to insufficient knowledge and skills of the persons who run them and external conditions.
Yachts of 15 to 30 meters and over are called *large yachts*. Although, due to their purpose, technological features and sophisticated equipment they seem similar to the previously described group of yachts, they are, in fact, much more

similar to ships. They mostly have a propeller or, sometimes, jet propulsion. The speeds developed by these yachts range from about 15 to 35 knots. They are usually used for longer cruises, and given their size they can easily navigate in adverse weather conditions. These vessels are often anchored outside the ports, and passengers are transported to shore by launches. Because of their length (especially yachts over 25 meters) they can only berth in larger marinas i.e. the larger ports open to public transport. The number of accidents of large yachts is much smaller in relation to the accidents of all other types of nautical tourism vessels. This is due to considerably better equipment, much better maintenance, and for the most part, the fact that they are run by qualified and experienced crew, and not by their owners or users. The characteristics of the accidents that occur are not significantly different from the characteristics of smaller ship accidents.
Regarding the threats to the safety of navigation of *sailing boat*s, it is most convenient to distinguish the sailing boats of up to 15 meters in length, and those over 15 meters. Sailing of boats of up to 15 meters is very similar to the sailing of boats and motor yachts of the same length. A significant difference occurs primarily in the part referring to the manoeuvring characteristics during the navigation in unfavourable weather conditions.
Sailing boats are very stable vessels, with large draft and lower freeboard they can maintain their course very well. These vessels develop the speed of about 10 knots by their propulsion units. Above described sailing boats are subject to grounding and less often to collision accidents due to quite low speed of navigation. The largest number of incidents of these vessels is caused by incompetence or inexperience of their skippers.
Larger sailing boats (more than 15 meters in length), or sailboats are generally technologically highly sophisticated craft. They can reach a length of more than one hundred meters, most often them are used as racing boats for the most demanding competitors, or as tourist boats intended for the most demanding clientele. In both cases, they are constructed of very expensive materials and with the latest state-of-the-art technology. As the handling of these vessels requires a high level of expertise, skills and experience, the same as large yachts, they are also run by qualified and experienced crew and therefore they are rarely involved in accidents. It is not common for these vessels to sail near the coast. The number, characteristics and frequency of their accidents approximately correspond to the number of accidents in passenger ships in international voyages.

5. Conclusion

Applicable Croatian and Montenegrin legal regulations have roots in former Yugoslavia regulations and therefore there is a lot of similarity in the current legal framework of both countries. Because of this and due to the international character of maritime affairs and tourism, most maritime law institutes governing nautical tourism are very similar. However, there are certain differences that have arisen due to the adjustment of particular institutes with national interests. This means the regulation of the legal status of vessels and nautical tourism ports, but not the provisions on maritime safety.
Although the vessels in nautical tourism are not subject to the provisions of international conventions, and are subject only to national legislation, both countries seek to meet high standards of navigation safety of yachts and boats, that being a prerequisite for the sustainable development of nautical tourism.
By analyzing the legal provisions applicable to the facilities of nautical tourism one can observe a large number of different laws and regulations that are not always mutually consistent neither in the legislation of individual countries nor in comparative law.
Inconsistency in definitions and types of nautical tourism facilities is also enhanced by the fact that the regulations in the domain of nautical tourism in Croatia and Montenegro are adopted within the framework of two different ministries – Maritime Affairs and Tourism. For the Ministry of Maritime Affairs the most important is the safety aspect of vessels navigating in the internal waters and territorial sea, while the Ministry of Tourism cares more for the tourist offer in nautical tourism as demonstrated by the categorization of specific regulations.
The analysis of the existing provisions shows that there are too many regulations that govern the activities of nautical tourism, hence the inconsistency, excessive regulation and legal gaps in the existing legislation. It all has certainly been affected by different political and economic interests that influence the adoption of various regulations. An example of this is Croatia which has been waiting for years for the adoption of a new and better quality A*ct on Maritime Domain and Seaports*. Because of different interests and conflicting opinions a series of attempts to adopt a new legal text have failed. Quality regulation of maritime domain is one of the preconditions for the efficient development of nautical tourism ports.
From all of this we can conclude that a thorough review of existing legislation in Croatia and Montenegro is essential, thus, the proposal for the set up of working groups in each country made up of experts who are engaged in the specific activities of nautical tourism in order to comprehensively and clearly regulate this important economic activity.

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References

Grabovac, I. 2005. *Suvremeno hrvatsko pomorsko pravo i Pomorski zakonik* (*Modern Croatian Maritime Law and Maritime Code*), Književni krug, Split

Grabovac, I.; Petrinović, R. 2006. *Pomorsko pravo* (*Maritime Law*), Split

Luković, T.; Bilić, M. 2007. Luke nautičkog turizma u Hrvatskoj i strategija lokalnog razvitka (*The Ports of Nautical Tourism in Croatia and Strategy of Local Development*), *Naše more*, 54(3-4), Dubrovnik

Luković, T. et al. 2015. *Nautički turizam Hrvatske* (*Croatian Nautical Tourism*), Redak, Split

Milošević Pujo, B.; Petrinović, R. 2008. *Pomorsko pravo za jahte i brodice* (*Maritime Law for Yachts and Boats*), Split

Odluka o određivanju luka prema značaju (*The Decision* on *Determination* of *Ports according* to *Significance*), Official gazette of the Republic of Montenegro Nos 20/11, 41/12 and 14/14.

Pavić, D. 2006. *Pomorsko imovinsko pravo* (*Maritime Property Law*), Književni krug, Split

Pomorski zakonik Republike Hrvatske (*Maritime Code of the Republic of Croatia*), Official gazette of the Republic of Croatia Nos. 181/04, 76/07, 146/08, 61/11, 56/13 and 26/15.

Pravilnik o brodicama i jahtama (*the Ordinance on Boats and Yachts*), Official gazette of the Republic of Croatia Nos. 27/05, 57/06, 80/07, 3/08, 18/09, 56/10, 97/12, 137/13 and 18/16.

Pravilnik o razvrstavanju i kategorizaciji luka nautičkog turizma (*the Ordinance on the Classification and Categorization of Nautical Tourism*), Official gazette of the Republic of Croatia Nos. 72/08.

Pravilnik o uvjetima koje moraju zadovoljiti plovni objekti, te fizička ili pravna osoba koja obavlja djelatnost iznajmljivanja plovila (*the Ordinance on the Conditions to be met by Vessels, and Natural or Legal Person Performing the Activity of Leasing Vessels*), Official gazette of the Republic of Croatia Nos. 41/05 and 62/09.

Pravilnik o uvjetima za obavljanje djelatnosti iznajmljivanja plovila sa ili bez posade i pružanje usluge smještaja gostiju na plovilu (*the Regulation on Conditions for Leasing Vessels with or without Crew and Offering Accommodation Service on board Vessels*), Official gazette of the Republic of Croatia Nos. 99/13.

Pravilnik o vrstama i kategorijama plovnih objekata nautičkog turizma (*the Ordinance on the Types and Categories of Vessels of Nautical Tourism*), Official gazette of the Republic of Croatia Nos. 69/08, 83/09 i 49/15.

Pravilnik o vrstama objekata nautičkog turizma, minimalno tehničkim uslovima i njihovoj kategorizaciji (*the Rulebook on Types of Nautical Tourism Facilities, Minimal Technical Conditions and their Categorization*), Official gazette of the Republic of Montenegro Nos 9/03.

Strategija razvoja nautičkog turizma Republike Hrvatske (*Development Strategy of Croatian Nautical Tourism*), 2009.-2019.

Šamanović, J. 2002. *Nautički turizam i management marina* (*Nautical Tourism and Marina Management*), Visoka pomorska škola u Splitu, Split, Hrvatska.

Uredba o čamcima (*Regulation on smaller boats*), Official gazette of the Republic of Montenegro Nos 51/04 and 44/09.

Uredba o razvrstaju luka otvorenih za javni promet i luka posebne namjene (*the Regulation on the Classification of Ports Open for Public Transport and Ports for Special Use*), Official gazette of the Republic of Croatia Nos. 97/13.

Uredba o uslovima koje moraju da ispunjavaju luke razvrstane prema vrsti pomorskog saobraćaja i namjeni (*Regulation on Conditions* that must be *met by Ports Classified* according to the *type of Maritime Traffic* and *Purpose*), Official gazette of the Republic of Montenegro Nos 20/11.

Uredba o uvjetima kojima moraju udovoljavati luke (*the Decree on Conditions that Ports Must Meet*), Official gazette of the Republic of Croatia Nos. 110/04.

Uredba o uvjetima za dolazak i boravak stranih jahti i brodica namijenjenih športu i razonodi u unutarnjim morskim vodama i teritorijalnom moru Republike Hrvatske (*the Regulation on Conditions for the Arrival and Stay of Foreign Yachts and Boats Intended for Sport and Leisure in the Internal waters and Territorial Sea of the Republic of Croatia*), Official gazette of the Republic of Croatia Nos. 97/13.

Zakon o jahtama (*the Law on Yachts*), Official gazette of the Republic of Montenegro Nos. 46/07, 73/10, 40/11 and 42/15.

Zakon o lukama (*Port Law*), Official gazette of the Republic of Montenegro Nos 51/08, 40/11 and 27/13.

Zakon o moru (*The Law of the Sea*), Official gazette of the Republic of Montenegro Nos 17/07 and 6/08.

Zakon o morskom dobru (*The Law on Maritime Domain*), Official gazette of the Republic of Montenegro Nos 14/92.

Zakon o pomorskom dobru i morskim lukama (*the Maritime Domain and Seaports Act*), Official gazette of the Republic of Croatia Nos 158/03, 141/06, 38/09, 123/11 and 56/16.

Zakon o pružanju usluga u turizmu (*Act on the Provision of Tourism Services*), Official gazette of the Republic of Croatia Nos 68/07, 88/10, 30/14, 89/14 and 152/14.

Zakon o sigurnosti pomorske plovidbe (*the Law on Safety of Maritime Navigation*), Official gazette of the Republic of Montenegro Nos 62/13, 6/14 and 47/15.

Zakon o zaštiti mora od zagađivanja sa plovnih objekata (*The Law for the Prevention of Pollution from Ships*), Official gazette of the Republic of Montenegro Nos 20/11, 26/11 and 27/14.