

Common understandings on priority actions and KPI

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1. Introduction

The FRAMESPORT (FRAMEwork initiative fostering the Sustainable development of Adriatic small PORTs) is a strategic project that has the aim to create a coordinated initiative to support the sustainable development of small ports of the Adriatic basin through a strategic perspective. The project has been developed in partnership with several organisations, such as local and national authorities, universities, research institutes, port authorities and local businesses. This multi-stakeholder approach has been designed to ensure that all interests are taken into account and can be represented in the development of the project.

Therefore, the objective is to turn small ports into proactive drivers of the socio-economic development of Adriatic coastal area. This strategic goal requires a multifaceted and interdisciplinary approach, including both the adoption of concrete pilot projects as well as identification of priority themes to be promoted within the overall strategy. These actions were performed adopting a bottom-up approach, involving local and national stakeholders since the beginning of the project. This allows for local and national needs and wishes to be taken into account when formulating project objectives and activities.

Also, the various project partners have been selected to guarantee a wide territorial cover. The aim was to address the planning and management topics, the business model implementation, the enhancement of training and competence, as well as the development of Information and Communication Technologies (ICT) tools and services. Through this partnership, it was possible to develop an ICT platform that would collect key data on small ports in order to use this information to drive sustainable development.

The created FRAMESPORT portal works as a bridge between the two sides of the Adriatic basin, enabling better communication between Italian and Croatian stakeholders. This helps foster a more consistent and united network of small ports, businesses, and institutions that can align their sustainable performance, infrastructure, and policies in order to favor their development and growth. It is hoped that this collaborative platform will provide a foundation for further initiatives aimed at improving sustainable practices in small port communities across the Adriatic basin.

1.1. Connection to the Work Package 3

Work Package 3 represents the core technical activity of the FRAMESPORT project. In fact, it has the aim to create the aforementioned ICT platform or portal, and define a common strategic approach to support the adoption of better practices to boost sustainable development. The WP3 is therefore

accompanying the whole evolution of the FRAMESPORT project, being the backbone of the platform collecting information on small ports infrastructures and their potentials.

A comprehensive survey was performed to grasp the status quo of the Adriatic basin and its small ports through data collection that was later run on the platform in an adequate manner. This data was collected in a database that is going to be updated regularly to permit the continuous development of the area. This information is also going to be valuable to outline the action plan to promote sustainable development in the area.

WP3 is also an umbrella activity that allows the launching of the WP4 and WP5 activities. In particular, the WP4 has the objective of defining the general picture of the small ports' phenomenon. Thus, the purpose was to deliver a wide set of data fundamental to populate the database of the FRAMESPORT platform and identify the best practices and initiatives that are characterizing small ports. These activities also have the aim of discussing and defining the priority themes and, consequently, the actions to be promoted at an upper level. Therefore, it is going to contribute to the definition of the FRAMESPORT strategy for sustainable development. In regards to WP5, this is the practical side of the project. Pilot projects are going to be performed to test technical solutions and experimental initiatives to identify new or alternative paths to solve current challenges as well as to move small ports towards sustainable development.

Methodology for the creation of the FRAMESPORT strategy

The methodology is conceived to be adaptable to different spatial and socio-cultural settings to address the challenges and opportunities of small ports based on:

- I. Understanding of the current criticalities in order to rethink approaches for planning and managing small ports
- II. Facing the current challenges, strengthening collaboration by forming new partnerships and forms of organization
- III. Reconceptualizing existing social, economic, and cultural values in order to design a common strategy

Steps toward the FRAMESPORT strategy development

- I. Elaboration of the information collected and produced under Work package 4
- II. Elaboration of the information collected and produced under Work package 5
- III. Production and coordination of a semi-structured questionnaire which is to be submitted to get insights from local stakeholders along with the Work package 4 leader
- IV. Support of consultation meetings inside Work package 4 activities
- V. Collection of the questionnaire results and preparation of a main strategy elements report

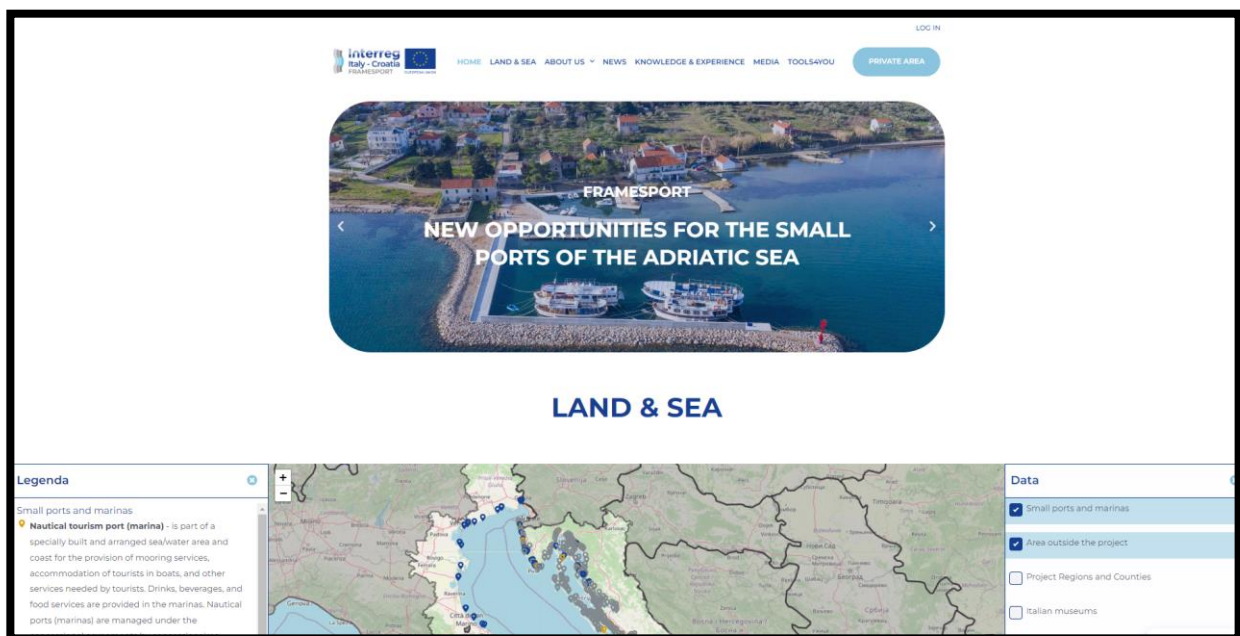
- VI. Support of the second round of meetings organized by the WP4 leader along with other public events, where the aforementioned report will be discussed;
- VII. Finalization of the strategy document.

1.2. FRAMESPORT platform

The general aim of the FRAMESPORT platform is to:

- I. create a consistent and united network of small ports, businesses, and institutions between Italy and Croatia;
- II. present and sponsor the various stakeholders of the territory, supporting the improvement of their sustainable performances;
- III. favor the sharing of best practices and know-how and provide valuable info and tools to users and stakeholders;
- IV. facilitate strategic co-operation between the involved stakeholders;
- V. promote an efficient exchange of data, information, and knowledge amongst all participants;
- VI. provide accurate reports about progress made in terms of sustainability;
- VII. enable an easy access to data for all stakeholders involved;
- VIII. be useful to users and stakeholders of the territory.

Figure 1 Layout of the FRAMESPORT platform



Source 1 www.framesport.eu

2. Purpose of the document

The FRAMESPORT project's strategic framework is a plan that outlines the long-term goals and objectives, along with the strategies and actions that will be taken to achieve them. Key actions refer to the most important tasks or objectives that are necessary for the project to achieve its goals and move forward. These actions should be aligned with the overall strategic framework and support the achievement of the project's desired outcomes.

Effective key actions are typically well-defined and measurable, with clear targets and deadlines. They should be prioritized based on their importance to the project's goals and the resources available to execute them. Key actions should also be aligned with FRAMESPORT's values and culture and should be communicated to all relevant stakeholders in order to ensure adequate and strategic support.

The successful execution of key actions is crucial to the success of FRAMESPORT's strategic framework. By focusing on the most important tasks and objectives, and ensuring that they are carried out effectively, the project can move closer to achieving its goals and realizing its desired outcomes.

Priority actions refer to the most important tasks or goals that the FRAMESPORT as a project together with the project partners should focus on during the duration of the project. These actions are typically identified through strategic planning and are intended to drive the project toward its end goal, the sustainable development of small ports of the Adriatic basin.

Key performance indicators (KPIs) are metrics that are used to measure progress towards these priority actions and help to assess the effectiveness of the efforts done by the project partners.

Common understandings on priority actions and KPIs involve recognizing their importance in driving success and ensuring that they are clearly defined and consistently tracked. Effective use of priority actions and KPI helps to prioritize resources, identify areas for improvement, and make informed decisions about how to move forward.

Common understandings of Key performance indicators involve recognizing the importance of tracking and measuring progress, thus ensuring that the indicators chosen are relevant and aligned with the previously set goals. Effective use of KPIs requires consistent tracking and analysis, as well as regular review and adjustment as needed to ensure that they continue to accurately reflect FRAMESPORT's performance.

3. Adriatic port system

The Adriatic port system refers to the of ports located along the Adriatic Sea, which stretches along the eastern coast of Italy and the western coast of the Balkan Peninsula. These ports serve as important hubs for the movement of goods and people in the region, and play a critical role in the economic development of the countries that they are located in.

The Adriatic port system is made up of a variety of different types of ports, including commercial ports, naval ports, and fishing ports.

The Adriatic port system plays a vital role in the economic development of the region, serving as a gateway for the import and export of goods to and from Europe, Asia, and the Middle East. These ports handle a wide range of cargo, including containerized and non-containerized goods, bulk commodities, and project cargo.

The Adriatic port system is also an important tourism destination, with a number of ports serving as starting points for cruises and other leisure travel. The region is home to a number of historical and cultural attractions, as well as natural beauty, making it a popular destination for both domestic and international travelers.

In addition to their economic importance, the Adriatic ports also play a vital role in the region's cultural and social development. Many of the ports are home to a variety of attractions and amenities, including museums, restaurants, and shopping districts, which help to attract visitors and boost the local economy.

Overall, the Adriatic port system is a vital component of the region's infrastructure and plays a key role in the economic and social development of the countries that it serves.

3.1. Italy's port (marinas) system

The main regulation on ports at the national level has been Nr. 84 of 1994, which introduced the concept of classification based on their main use which has been further adjusted with the most recent D.Lvo 156/2016, which introduced the concept of Port Authority. Despite a general definition that sets the competence on some of the main nodes at the national level, further definitions are still possible with reference to the existing variegated panorama of small ports supplying services to nautical tourism and another kind of sea-based activities.

The project FRAMESPORT incorporates 7 Italian Adriatic regions:

- I. Friuli Venezia Giulia
- II. Veneto
- III. Emilia Romagna
- IV. Marche
- V. Abruzzo
- VI. Molise
- VII. Puglia

Coastal and marine tourism is an essential maritime economic activity. As stated in the project documentation, nautical tourism is a subsector of coastal and marine tourism that involves people and businesses and significantly impacts national and regional economies. They also have a huge potential to become growth generators, as reported by the World Travel & Tourism Council (WTTC). Nautical tourism is a complex system that includes various modes of transportation (infrastructures, services, and demand).

Due to a big resident boating population and a significant boat-building industry, small port facilities in Italy are of very high quality. Many people have found joy in sailing in Italy, and Italians have developed marinas and small ports throughout the riviera to meet guests' needs. In addition, Italy has some of the most beautiful harbors in Europe, with many historical sites that can be explored from the sea.

Many people have yet to discover sailing as a unique and appealing way to spend their vacations, opening up opportunities for ports to play a key role in local growth and prosperity. Italy is well-positioned to capitalize on this potential market due to its extensive coastline, numerous islands, and more than 230 marinas.

Italy is a wealthy and contemporary country that has evolved maritime tourism into the most popular and appealing tourist branch, constantly enhancing all services and creating modern and

well-equipped ports to ensure that all guests receive flawless treatment. Tourists have access to countless activities such as fishing, scuba diving, dolphin watching, water sports, or simply relaxing on deck while admiring the views.

Small and tourist ports are the primary location for performing nautical tourism activities. The data analyses show differences between Italian touristic regions, particularly between the north and south regions, in terms of infrastructure for marine tourism and essential demand variables such as nautical licenses and boats. As such, it is important for these ports to be well-maintained with appropriate safety measures in place for visitors.

The physical infrastructure supply and equipment are critical components for a properly operational port, especially in small ports. This includes everything from docking facilities to navigation systems to waste management systems – all of which contribute to providing tourists with an enjoyable experience while out at sea.

Figure 2 FRAMESPORT project partners from involved areas



3.2. Croatia's port (county significance, local significance, and nautical ports) system

According to the Ordinance on the Classification of Ports, the small ports in Croatia that are part of this study are classified as ports open for public traffic and operated by port administrations created by counties and local self-government units. More than 450 small ports and twenty-two port authorities govern harbours in Croatia. Port authorities range from small port authorities with only six ports, like the County port authority of Cres or Novalja, to the Split Port Authority, which manages 80 small ports and harbours in Split-Dalmatia County.

The project FRAMESPORT incorporates 7 Croatian Adriatic regions:

- I. Istria County
- II. Primorje - Gorski Kotar County
- III. Lika - Senj County
- IV. Zadar County
- V. Šibenik – Knin County
- VI. Split – Dalmatia County
- VII. Dubrovnik – Neretva County

Out of 458 ports, 397 ports and harbours returned data points that created a database for the purposes of the FRAMESPORT project. The disparity in numbers derives primarily from the fact that boaters cannot moor in all ports and harbours because some are small and only have utility (local) moorings. All ports that accommodate boaters in the seven Adriatic counties are represented here. All the ports for which data is gathered welcome boaters and provide various berth services, but some provide more. It has to be underlined that Marinas (i.e., Privately owned and operated small ports) are not included within the ports covered by this survey.

The Croatian Counties and Port Authorities for collecting data are listed and described further below.

Istria is the Croatian peninsula that is closest to Italy. It has all of the predispositions for successful thriving in maritime business aspects. According to the Order on the classification of ports open to public traffic, the County of Istria includes seven ports of county importance: Pula, Brijuni, Rovinj, Poreč, Novigrad, Umag, and Plomin.

Ports of public transport of county and local importance (26 in total) are managed by five county port authorities whose founder is the County of Istria (Port Authorities of Pula, Rovinj, Poreč, Umag-Novigrad, and Rabac).

Primorje-Gorski Kotar County is a local self-government unit situated in the western part of Croatia, where the Northern Adriatic meets the mountains of northwest Croatia. This county is home to the Port of Rijeka – a port that holds special economic interest to the Republic of Croatia and one of the deepest ports in the Adriatic, with a sea depth of 18m. It encompasses the Rijeka, Sušak, Bakar, Omišalj, and Raša basins. It is also home to 89 ports open to public traffic (Port of Rijeka, 27 ports open to public traffic at the county level, and 61 local ports). Ports are located from Mošćenička Draga (County Port Authority of Opatija-Lovran-Mošćenička Draga), County Port Authority of Bakar-Kraljevica-Kostrena, County Port Authority of Crikvenica, all to the Island County port Authorities of Krk, Cres and Rab.

Lika-Senj County is located off Velebit mountain, one of the tallest Croatian mountains and home of bora wind. It is home to two County Port Authorities: County Port Authority Senj, which governs fourteen ports, and County port Authority Novalja which covers part of the ports located on the northern part of the island close to the municipality of Novalja on the island of Pag.

The Zadar Port System located in the central Adriatic includes a series of ports and harbours of local and county importance and national strategic importance. The Port of Zadar primarily operates as a passenger port and continues to develop in that direction, focusing on large cruise liners, ferry traffic, and ro-ro traffic. Nautical tourism has a part in the national economy. A very important role in Port system development has ports of public transport of county and ports of local importance (115 in total). The County Port Authority of Zadar manages them.

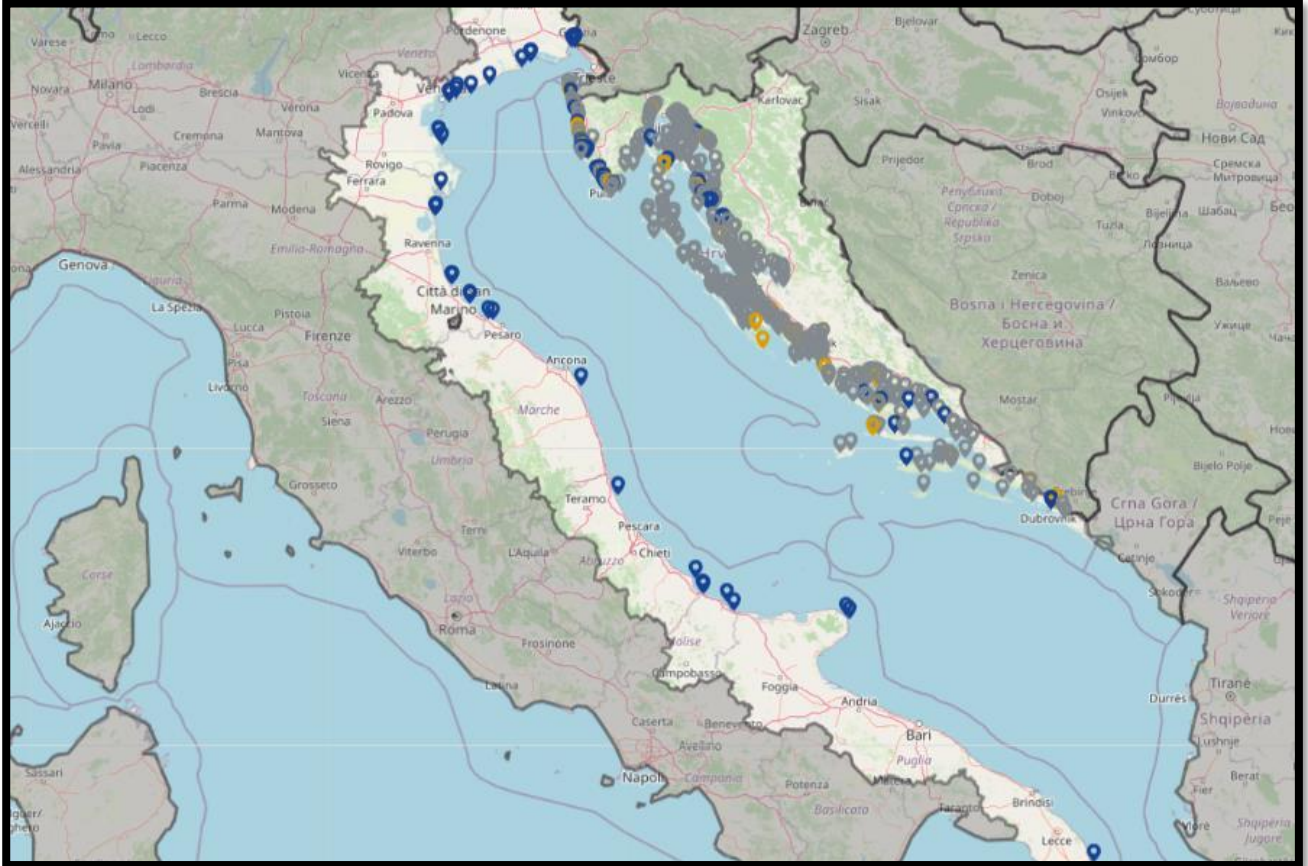
The County Port Authority of Zadar manages 113 ports, none of which are special-purpose ports or marinas. In about 15 ports, there is regular traffic where there are ferry and ship lines. Moreover, in the ports where the nautical activity occurs, there are no services listed in the survey.

Split-Dalmatia County is the largest Croatian county in terms of area, and it is located in the south of the country. On the mainland and the islands, the county comprises 15 cities and 38 municipalities. Split serves as the county seat. There are 55 regional and municipal ports in the county. Apart from Split, the County is home to 54 other ports of regional and local significance. Split is the largest port in the county and is a port of special - international economic interest for the Republic of Croatia. The county is home to the international airports of Split and Brač (on the island of Brač), which handles the majority of passengers and freight during the summer. The island of Hvar also has a tiny airport that caters to tourist traffic and smaller planes.

Dubrovnik-Neretva County is the southmost Croatian county. The order on the classification of ports open to public traffic includes two ports of county importance: Ploče and Dubrovnik-Gruž. Ploče is a cargo port of significant importance for neighboring Bosnia and Herzegovina, and Dubrovnik-Gruž is Croatia's cruising vessel's home port.

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

Figure 3 FRAMESPORT platform



Source 2 www.framesport.eu

4. Key performance indicators

A key performance indicator (KPI) is a measurable value that demonstrates how effectively a project is achieving its key objectives or milestones that have been arbitrarily set and agreed upon. These indicators provide a clear and quantifiable way to track the success and identify areas that may need improvement or are lagging behind a set schedule. Effective use of KPIs help make data-driven decisions, optimize operations, and allocate resources more efficiently. It is important to choose the right KPIs since they will ultimately aid with tracking the statuses of the set criteria. Not all KPIs are relevant, and some may be more important than others depending on the industry and specific goals of the project. It is also important to regularly review and update performance indicators to ensure that they are still relevant and aligned with current objectives.

In addition to tracking individual KPIs, it is also important to consider how they relate to each other and how they fit into the overall project strategy.

Effective use of KPIs requires careful planning and analysis. It is important to clearly define goals and the specific actions that will take to achieve them completely. A dedicated system should also be established for tracking and analyzing them and developing strategies for addressing any areas that are not meeting the project's target goals.

4.1. Port Operations and Management

Port operations and management are crucial for ensuring that small ports and marinas are operating effectively and efficiently. Managing a port involves coordinating a variety of tasks, including docking and berthing, passenger services, maintenance, and security. Effective management of port operations requires careful planning, coordination, and communication between port authorities and other stakeholders, including staff, suppliers, and customers. Additionally, technological advancements and digitalization are increasingly important in improving port operations and management, allowing for the integration of data and systems, automation of processes, and real-time monitoring of port activities. Furthermore, port operations and management must also consider the impact of their activities on the environment and the local community, by implementing sustainable practices and being socially responsible. Overall, effective port operations and management are essential to ensure the long-term success of small ports and marinas, while also contributing to the social and economic development of their local communities.

4.2. Environment and Sustainability

Environment and sustainability are critical considerations for small ports and marinas to ensure their long-term success and minimize their impact on the environment. Small ports and marinas must

operate in a sustainable manner, balancing their economic goals with their impact on the environment. To do so, they must adopt sustainable practices in areas such as energy consumption, water usage, waste management, and pollution control. Additionally, small ports and marinas must comply with local environmental regulations and strive to exceed those requirements wherever possible. This includes initiatives such as implementing renewable energy sources, reducing waste and pollution, and protecting local wildlife and ecosystems. By adopting sustainable practices, small ports and marinas can reduce their environmental impact, enhance their reputation as responsible community members, and improve the long-term economic viability of their operations.

4.3. Customer Service and Satisfaction

Customer service and satisfaction are essential for the success of small ports and marinas. A positive customer experience can create loyal customers, positive word-of-mouth advertising, and increased revenue. To provide high-quality customer service, small ports and marinas must understand their customers' needs and preferences, and provide them with personalized services that exceed their expectations. This may include a range of amenities and services, such as clean facilities, assistance with docking and berthing, access to clean water and electricity, Wi-Fi, security, and entertainment. Additionally, small ports and marinas should gather feedback from their customers to understand their needs, preferences, and areas for improvement. A commitment to customer satisfaction can help small ports and marinas build a positive reputation in their local community, generate positive reviews and recommendations, and increase their overall revenue.

4.4. Technological Advancement and Digitalization

Technological advancement and digitalization are increasingly important for small ports and marinas. They enable port managers to optimize their operations, reduce costs, and improve customer service. For example, digitalization allows for the integration of data and systems, automation of processes, and real-time monitoring of port activities. This can enable port managers to identify bottlenecks, reduce waiting times, and enhance the overall efficiency of the port. Additionally, technology can be used to improve customer service, by providing customers with real-time information about docking availability, berthing status, weather conditions, and other critical information. Technological advancements can also enhance the security of the port, by enabling real-time monitoring of the port's perimeter and assets, and ensuring that any security breaches are identified and addressed in a timely manner. In summary, technological advancements and digitalization can enable small ports and marinas to improve their operations, increase their efficiency, and provide better service to their customers.

4.5. Safety and Security

Safety and security are critical considerations for small ports and marinas. These facilities must ensure that their employees and customers are safe and secure, and that their assets and infrastructure are protected. To do so, small ports and marinas should establish and follow robust safety and security protocols, including emergency response plans, risk management procedures, and security measures such as surveillance cameras and access controls. Additionally, it is essential to train and educate employees on safety and security best practices to help them identify and respond to potential risks and security breaches. In summary, safety and security are crucial considerations for small ports and marinas, and they should adopt best practices to ensure that their operations are safe, secure, and protected from potential threats.

4.6. Financial performance

Financial performance is a critical consideration for small ports and marinas. To ensure long-term sustainability, small ports and marinas must generate sufficient revenue to cover their operating costs and invest in necessary infrastructure improvements. Additionally, it is essential to maintain financial sustainability, which requires a balance between revenue and expenses. To achieve these goals, small ports and marinas should establish a comprehensive financial management strategy that includes revenue and expense forecasting, cash flow management, and investment planning. Moreover, it is essential to regularly review financial performance, assess potential risks and opportunities, and adapt the strategy accordingly to maintain financial sustainability. In summary, small ports and marinas must adopt a proactive and comprehensive approach to financial performance, including revenue generation, expense management, and investment planning to ensure their long-term sustainability.

4.7. Social and community responsiveness

Social and community responsiveness is an important consideration for small ports and marinas. These facilities operate in the local community and must be good corporate citizens, with a focus on employee satisfaction, employee engagement, labor relations, and community involvement. To achieve this, small ports and marinas must adopt a comprehensive approach that includes social and community responsibility initiatives, such as sponsoring local events, supporting local charities, and providing employment opportunities for local residents. Additionally, they must create a positive work environment, including fair wages, benefits, and opportunities for training and development, to ensure employee satisfaction and engagement. Overall, small ports and marinas should be committed to being responsible and responsive members of their local community, ensuring that they contribute positively to the social and economic health of the area.

4.8. Research

The research part of this document included a review of 200+ papers from several databases such as WebOfScience and Scopus. The research also incorporated discussions with relevant experts from the field as reviewing the available digital sources. This research part resulted in gathering of 137 key performance indicators which included KPIs from both nautical and freight ports.

These 137 key performance indicators were divided into 7 major categories covering all the major aspects of any business. The research papers and consequently performance indicators, referring solely to the marinas and smaller ports were significantly outnumbered by the ones referring to the freight ports. Therefore, the number of key performance indicators (KPIs) had to firstly be redacted to the ones that refer to the nautical ports, and secondly, the rest of the KPIs had to be removed or adjusted so they fit the narrative of small ports and marinas. The first reduction resulted in 10 KPIs in each of the 7 categories which was followed by another reduction to 5 KPIs in each category.

The categories are as follows:

1. Port operations and Management
2. Environment and Sustainability
3. Customer Service and Satisfaction
4. Technological Advancement and Digitalization
5. Safety and Security
6. Financial Performance
7. Social and Community Responsiveness

Category 1. Port operations and management

Effective port operations and management are essential for the success of small ports and marinas. To achieve this, several key performance indicators (KPIs) are closely tied to port operations and management in small ports and marinas.

- **Port Management** involves overseeing the day-to-day operations of the facility, managing the workforce, and ensuring that all relevant regulations and safety standards are met. KPIs related to port management may include measuring staffing levels to ensure the facility is adequately staffed with skilled and experienced workers, measuring customer satisfaction with the services and amenities provided by the port, and measuring the safety record of the port, with the aim of improving safety.
- **Efficiency** is critical for small ports and marinas, as it can help reduce operating costs and improve customer satisfaction. KPIs related to efficiency may include measuring turnaround time to reduce the time it takes for a boat to enter and leave the port, measuring dock utilization to identify ways to improve utilization, and tracking energy consumption and implementing measures to improve energy efficiency.
- Effective **berthing capabilities** are also critical for small ports and marinas, as they can help maximize the use of the facilities and improve customer satisfaction. KPIs related to berthing capabilities may include measuring dock capacity to identify ways to increase capacity, measuring availability to improve availability, and measuring maintenance frequency and quality to improve maintenance procedures.
- **Construction quality** and the quality of the facilities at a small port or marina can have a significant impact on customer satisfaction and safety. KPIs related to construction quality may include measuring the condition of the docks, buildings, and other facilities at the port to identify ways to improve the condition, measuring the frequency and quality of upkeep and maintenance to identify ways to improve these procedures, and ensuring that all facilities are in compliance with relevant regulations and safety standards.
- Managing **operating costs** is critical for the financial sustainability of small ports and marinas. KPIs related to operating costs may include measuring the cost of operating the port or marina per boat to identify ways to reduce costs, measuring revenue generated by the port or marina to identify ways to increase revenue, and measuring the cost of maintaining the facilities to identify ways to reduce maintenance costs.

Overall, effective port operations and management in small ports and marinas require careful attention to a range of KPIs. By tracking and improving these metrics, small ports and marinas can improve the efficiency and safety of their operations, while also enhancing the customer experience and ensuring long-term financial sustainability.

Category 2. Environment and Sustainability

Environment and sustainability are crucial considerations for small ports and marinas. They can have a significant impact on the local environment and the communities that depend on them. Here are some key performance indicators (KPIs) that are connected to environment and sustainability in small ports and marinas.

- **Green solutions** are an essential part of environmental sustainability in small ports and marinas. KPIs related to green solutions may include measuring the use of renewable energy sources, such as solar panels or wind turbines, to reduce the use of non-renewable energy sources.
- KPIs may also include the use of sustainable building materials, such as wood or recycled materials, and **sustainable development** practices, such as rainwater harvesting, to reduce the impact of the facilities on the environment.
- **Environmental quality** is an important aspect of sustainability in small ports and marinas. KPIs related to environmental quality may include measuring water quality to ensure that the port or marina is not contributing to water pollution. It may also include tracking air quality and noise pollution to ensure that the facility is not contributing to environmental degradation in the surrounding area.
- **CO2 reduction** is a critical aspect of sustainability in small ports and marinas. KPIs related to CO2 reduction may include tracking energy consumption and implementing measures to improve energy efficiency, such as upgrading to energy-efficient lighting or equipment. It may also include measuring the use of low-emission or electric vehicles in the port or marina.
- **Waste management** is another key aspect of sustainability in small ports and marinas. KPIs related to waste management may include measuring the amount of waste generated by the port or marina and implementing measures to reduce this waste, such as recycling programs or composting. It may also include measuring the use of eco-friendly cleaning products and ensuring that all waste is disposed of safely and responsibly.

In conclusion, environment and sustainability are crucial considerations for small ports and marinas. By tracking and improving these KPIs related to green solutions, sustainable development, environmental quality, CO2 reduction, and waste management, small ports and marinas can reduce their environmental impact, enhance their sustainability, and contribute to the long-term health of their local communities.

Category 3. Customer Service and Satisfaction

Customer service and satisfaction are critical for the success of small ports and marinas. A high level of customer service can lead to repeat business and positive reviews, while poor service can lead to a negative reputation and loss of business. Here are some key performance indicators (KPIs) that are connected to customer service and satisfaction in small ports and marinas.

- **Customer satisfaction** is an essential KPI for small ports and marinas. Measuring customer satisfaction can provide insight into the quality of the facilities and services provided. KPIs related to customer satisfaction may include conducting surveys to measure customer satisfaction with the services and amenities provided, and tracking customer complaints to identify areas for improvement.
- **Accommodation services** are another critical aspect of customer service in small ports and marinas. KPIs related to accommodation services may include tracking the availability and quality of dock and mooring facilities, measuring the quality and cleanliness of restroom and shower facilities, and tracking the availability and quality of rental boats.
- **Customer feedback** is an essential part of measuring and improving customer service in small ports and marinas. KPIs related to customer feedback may include tracking the frequency and quality of customer feedback, measuring the responsiveness to customer feedback and requests, and using customer feedback to identify areas for improvement.
- **Customer experience** is another key aspect of customer service in small ports and marinas. KPIs related to customer experience may include tracking the ease of use of the facilities and services provided, measuring the friendliness and helpfulness of staff, and tracking the speed and accuracy of service delivery.
- **Service reliability** is critical to ensuring a high level of customer service in small ports and marinas. KPIs related to service reliability may include measuring the availability and quality of customer service, tracking the speed and accuracy of response times, and tracking the frequency and duration of service disruptions or outages.

In conclusion, customer service and satisfaction are crucial considerations for small ports and marinas. By tracking and improving these KPIs related to customer satisfaction, accommodation services, customer feedback, customer experience, and service reliability, small ports and marinas can provide a high level of customer service, improve their reputation, and ensure the long-term success of their business.

Category 4. Technological Advancement and Digitalization

Technological advancement and digitalization are increasingly becoming essential considerations for small ports and marinas. The use of technology can help improve efficiency, increase security, and enhance the overall customer experience. Here are some key performance indicators (KPIs) that are connected to technological advancement and digitalization in small ports and marinas.

- **Innovation** is critical for small ports and marinas, as it can help identify new opportunities for growth and improvement. KPIs related to innovation may include measuring the frequency and quality of new ideas and innovations, tracking the implementation of these ideas, and measuring the impact of these innovations on the port or marina.
- **Digitalization** is becoming more important for small ports and marinas, as it can help improve communication, streamline processes, and enhance customer service. KPIs related to digitalization may include tracking the adoption of digital technologies such as online booking and payment systems, measuring the quality and availability of digital infrastructure such as Wi-Fi and broadband, and measuring the impact of digitalization on customer satisfaction and efficiency.
- **Automation** can also be an essential aspect of technological advancement in small ports and marinas. KPIs related to automation may include tracking the adoption of automation technologies such as self-service kiosks and automated mooring systems, measuring the efficiency gains from automation, and measuring the impact of automation on customer satisfaction.
- **Smart port technology** can help small ports and marinas improve safety, efficiency, and sustainability. KPIs related to smart port technology may include tracking the adoption of smart technologies such as sensors, automation, and data analytics, measuring the efficiency gains from smart technologies, and measuring the impact of smart technologies on safety and sustainability.
- **IT infrastructure security** is essential for small ports and marinas, as they handle sensitive data and critical operations. KPIs related to IT infrastructure security may include measuring

the quality and effectiveness of security measures such as firewalls and encryption, tracking the frequency and impact of security incidents, and measuring the impact of security measures on the overall safety and reliability of the port or marina.

Overall, technological advancement and digitalization are becoming increasingly important for small ports and marinas. By tracking and improving these KPIs related to innovation, digitalization, automation, smart port technology, and IT infrastructure security, small ports and marinas can enhance their efficiency, safety, and overall customer experience.

Category 5. Safety and Security

Safety and security are essential considerations for small ports and marinas. These facilities can be high-risk areas for accidents, injuries, and theft, so it is critical to take measures to ensure the safety and security of staff and customers. Here are some key performance indicators (KPIs) that are connected to safety and security in small ports and marinas.

- **Improved safety** is a critical KPI for small ports and marinas. Measuring safety incidents can help identify areas for improvement and evaluate the effectiveness of safety measures. KPIs related to improved safety may include tracking the frequency and type of safety incidents, measuring the effectiveness of safety protocols and procedures, and tracking the completion of safety training and education programs.
- Developing and implementing an **emergency response plan** is essential for small ports and marinas to respond to unexpected situations, such as accidents or natural disasters. KPIs related to an emergency response plan may include tracking the development and implementation of the plan, measuring the effectiveness of the plan during an emergency situation, and tracking the completion of emergency response training and drills.
- **Risk management** is a critical KPI for small ports and marinas. Identifying potential safety and security hazards and addressing them before they become significant issues is essential. KPIs related to risk management may include conducting regular risk assessments to identify potential hazards, tracking the implementation of risk reduction measures, and measuring the effectiveness of risk management strategies.
- **Security measures** are also critical for small ports and marinas to protect against theft and other security threats. KPIs related to security measures may include tracking the installation and use of security cameras and other surveillance equipment, measuring the effectiveness of security protocols and procedures, and tracking the completion of security training and education programs.

- **Training and education for employees** are essential KPIs for small ports and marinas to ensure that staff are equipped to handle safety and security situations. KPIs related to training and education may include tracking the completion of safety and security training programs, measuring the effectiveness of these programs, and tracking the implementation of ongoing training and education initiatives.

In conclusion, safety and security are crucial considerations for small ports and marinas. By tracking and improving these KPIs related to improved safety, emergency response plans, risk management, security measures, and training and education for employees, small ports and marinas can enhance their safety and security, protect staff and customers, and ensure the long-term success of their business.

Category 6. Financial Performance

Financial performance is a critical consideration for small ports and marinas. These facilities need to generate revenue and maintain financial sustainability to ensure their long-term success. Here are some key performance indicators (KPIs) that are connected to financial performance in small ports and marinas.

- **Revenue** is an essential KPI for small ports and marinas. Measuring revenue can help identify areas for improvement and evaluate the effectiveness of revenue generation strategies. KPIs related to revenue may include tracking the total revenue generated by the facility, measuring the revenue generated from specific services and amenities, and measuring the revenue generated from events and other special activities.
- **Financial sustainability** is also critical for small ports and marinas. KPIs related to financial sustainability may include tracking expenses, including operating costs, capital expenditures, and debt payments, measuring the financial health of the facility using key financial ratios, and tracking the progress toward financial sustainability goals.
- **Profit margins** are a crucial KPI for small ports and marinas to maintain financial sustainability. Measuring profit margins can help identify areas for improvement and evaluate the effectiveness of cost reduction and revenue generation strategies. KPIs related to profit margins may include tracking the total profit generated by the facility, measuring the profit margins for specific services and amenities, and tracking the progress toward profit margin goals.

- **Return on investment (ROI)** is another essential KPI for small ports and marinas. Measuring ROI can help evaluate the effectiveness of investment decisions and identify areas for improvement. KPIs related to ROI may include tracking the ROI for specific capital investments, measuring the ROI for marketing and advertising campaigns, and tracking the progress toward ROI goals.
- **Cash flow** is also critical for small ports and marinas to maintain financial sustainability. KPIs related to cash flow may include tracking the inflows and outflows of cash, measuring the timing and frequency of cash inflows and outflows, and tracking the progress toward cash flow goals.

In conclusion, financial performance is a crucial consideration for small ports and marinas. By tracking and improving these KPIs related to revenue, financial sustainability, profit margins, ROI, and cash flow, small ports and marinas can ensure their long-term financial success and contribute to the overall economic health of their local communities.

Category 7. Social and Community Responsiveness

Social and community responsiveness are critical considerations for small ports and marinas. These facilities play an essential role in their local communities and must be responsible and responsive to the social and community needs and concerns. Here are some key performance indicators (KPIs) that are connected to social and community responsiveness in small ports and marinas.

- **Employee satisfaction** is an essential KPI for small ports and marinas. Measuring employee satisfaction can help identify areas for improvement and evaluate the effectiveness of employee engagement strategies. KPIs related to employee satisfaction may include tracking employee turnover rates, measuring employee satisfaction with the workplace culture and work environment, and tracking the progress toward employee satisfaction goals.
- **Employee engagement** is also critical for small ports and marinas. KPIs related to employee engagement may include tracking the level of employee engagement and commitment to the facility's mission and values, measuring employee engagement with company-sponsored events and initiatives, and tracking the progress toward employee engagement goals.
- **Labor relations** are another critical aspect of social and community responsiveness for small ports and marinas. KPIs related to labor relations may include tracking the frequency and impact of labor disputes, measuring the effectiveness of labor-management communication and cooperation, and tracking the progress toward labor relations goals.

- **Corporate social responsibility** is also critical for small ports and marinas to ensure that they are responsible and responsive to the needs and concerns of the community. KPIs related to corporate social responsibility may include tracking the implementation of environmental sustainability initiatives, measuring the impact of these initiatives on the environment, and tracking the progress toward corporate social responsibility goals.
- **Community involvement** is also essential for small ports and marinas to be responsible and responsive to the needs and concerns of the community. KPIs related to community involvement may include tracking the level of community engagement with the facility, measuring the impact of the facility on the local economy and community, and tracking the progress toward community involvement goals.

In conclusion, social and community responsiveness are critical considerations for small ports and marinas. By tracking and improving these KPIs related to employee satisfaction, employee engagement, labor relations, corporate social responsibility, and community involvement, small ports and marinas can ensure that they are responsible and responsive to the needs and concerns of the community, contribute to the overall social and economic health of the community, and ensure the long-term success of their business.

5. Conclusion

This document represents a comprehensive and critical analysis of the key performance indicators (KPIs) for small ports and marinas in the Adriatic. The author has identified 137 KPIs from reviewing more than 200 research papers and other available sources, but due to most of them referring to freight ports, the author had to refine the list to 35 KPIs that are more relevant to small ports and marinas. Most of these KPIs were also a topic of a conversation with some experts from the field. The 35 KPIs were divided into seven categories, namely, port operations and management, environment and sustainability, customer service and satisfaction, technological advancement and digitalization, safety and security, financial performance, and social and community responsiveness.

These categories reflect the critical areas of small ports and marinas, and they provide a framework for identifying the priority actions for improving their operations and management.

In terms of port operations and management, the KPIs that are identified in this document are focused on ensuring efficient and effective port operations. These KPIs include measuring the port's efficiency, berthing capabilities, construction quality, operating costs, and other critical factors that are essential to manage the port effectively.

The environment and sustainability category focuses on ensuring that the port is operating in an environmentally responsible and sustainable manner. The KPIs in this category include measuring the port's environmental quality, CO₂ reduction, waste management, and other critical factors that are essential to ensure the port's long-term sustainability.

Customer service and satisfaction is a critical factor in the success of small ports and marinas. The KPIs in this category are focused on ensuring that the port provides high-quality accommodation services, gathering and utilizing customer feedback, and providing a positive customer experience that meets or exceeds the customer's expectations.

Technological advancement and digitalization are an essential aspect of port and marina operations, and the KPIs in this category are focused on ensuring that the port is embracing innovation, digitalization, automation, smart port technology, and IT infrastructure security to improve its operations.

Safety and security are a critical consideration for small ports and marinas, and the KPIs in this category are focused on ensuring the safety and security of staff and customers. These KPIs include developing an emergency response plan, managing risks, implementing security measures, and providing training and education for employees.

Financial performance is a crucial consideration for small ports and marinas, and the KPIs in this category are focused on generating revenue, maintaining financial sustainability, profit margins, ROI, and cash flow.

Social and community responsiveness is also essential for small ports and marinas, and the KPIs in this category are focused on ensuring employee satisfaction, employee engagement, labor relations, corporate social responsibility, and community involvement.

In conclusion, this document represents a valuable resource for small ports and marinas in the Adriatic, providing a comprehensive understanding of the priority actions and KPIs that are essential for optimizing their baseline framework. By understanding and implementing these KPIs, small ports and marinas can achieve long-term success and ensure their contribution to the overall social and economic health of their local communities. This document will be a valuable reference point for future research and development initiatives in this area.