



REPUBLIC OF CROATIA
STATE AUDIT OFFICE
Rijeka Regional Office

PERFORMANCE AUDIT REPORT

Managing interventions in case of sudden pollution in the Adriatic Sea



Rijeka, March 2021

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SUMMARY

The State Audit Office audited the effectiveness of managing interventions in case of sudden pollution in the Adriatic Sea. The audited period was 2017 – 2019.

The audit subject were the activities of planning, organizing, implementing and reporting on the performed tasks of managing interventions in case of sudden pollution in the Adriatic Sea.

The auditees were the Ministry of the Sea, Transport and Infrastructure, Primorje-Gorski Kotar County and Split-Dalmatia County. Managing interventions in case of sudden pollution in the Adriatic Sea includes the implementation of procedures and measures for anticipation, prevention, limitation and readiness to react in case of sudden marine pollution.

The audit objectives were to check the legislative framework regarding the managing interventions in case of sudden pollution, to check the organization of the managing interventions, to assess the effectiveness of the system in managing interventions for sudden marine pollution and to check the activities of competent authorities.

The audit found, inter alia:

- National Intervention Plan for sudden marine pollution is not in line with the provisions of the Maritime Code from 2019
- National Intervention Plan for sudden marine pollution does not specify the manner in which special purpose ports concessionaires and port authorities should participate in the implementation of the National Intervention Plan
- Document on the assessment of the risk and sensitivity of the environment from marine pollution for the Split-Dalmatia County has not been prepared
- Secretary of Headquarters has not been appointed
- Secretary of the Split-Dalmatia County Regional Centre has not been appointed
- Rules of Procedure of the Split-Dalmatia County Regional Centre have not been adopted
- List of legal entities and craftsmen registered and authorized to implement intervention measures, ie removal of consequences caused by sudden pollution of the sea and coast, and their equipment and resources has not been regularly updated with the lists of county regional centres
- Intervention plan for sudden marine pollution sets an excessive range (up to 2 000 m³) of oil spilled into the sea for the operation of county-offices

- Coast Guard has a ship, adequate storage facilities for equipment disposal and educated people who successfully conducted exercises during 2019 and 2020, but does not have the necessary equipment to prevent and limit marine pollution in the area of the Protected Ecological-Fishing Zone, and if necessary in the territorial sea and inland waters
- Split-Dalmatia County and the competent ministry have not selected a responsible person to perform the activities of preparedness and response to sudden marine pollution
- Republic of Croatia does not have sufficient equipment to prevent and limit large-scale marine pollution
- National Intervention Plan for sudden marine pollution and county intervention plans do not prescribe a step-by-step action procedure and did not keep a log of the course of action for all marine pollution; County intervention plans are not activated for minor marine pollution and shipwrecks
- In some cases of sudden marine pollution, the extent of marine pollution has not been estimated, ie the estimated or actual amount of spilled oil or other material that has polluted the sea has not been indicated.

Based on the audit findings, applying the established criteria, the State Audit Office assessed that the management of interventions in case of sudden pollution in the Adriatic Sea in the Primorje-Gorski Kotar County and the Split-Dalmatia County is **effective, but need some improvements**, while the activities of the Ministry of the Sea, Transport and Infrastructure are **partially effective**.

The State Audit Office made the following recommendations:

- The National Intervention Plan for sudden marine pollution shall determine the manner and conditions of professional training and professional training programs of participants in the implementation of procedures and measures, the manner and conditions of equipment and use of material, technical and other means, the manner and conditions of implementing procedures and measures in offshore exploration and exploitation of hydrocarbons and manner of maintaining order and safety in interventions
- The National Intervention Plan shall specify the manner in which special purpose ports concessionaires and port authorities should participate in the implementation of the National Intervention Plan, given the fact that under the provisions of the Maritime Code they are obliged to immediately take measures to prevent the spread of contamination and eliminate pollution
- Make an assessment of the risk and sensitivity of the environment from marine pollution
- Appoint the Secretary of Headquarters

- Appoint the Secretary of the Split-Dalmatia County Regional Centre
- Determine by the Intervention Plan of the Split-Dalmatia County the adoption of the Rules of Procedure of the County Regional Centre and request its adoption
- Regularly update the list of legal entities and craftsmen registered and authorized to implement intervention measures (removal of consequences caused by sudden pollution of the sea and coast) and their equipment and assets with lists of county regional centres
- The National Intervention Plan should determine a lower range (less than 2,000 m³) of oil spilled into the sea for activities of county regional centres in county intervention plans in accordance with the needs and possibilities
- In cooperation with the Ministry of Defence, determine the necessary equipment for the activities of the Coast Guard in preventing and limiting marine pollution in the area of the Protected Ecological-Fishing Zone, and if necessary in the territorial sea and inland waters
- Appoint the responsible person to perform the tasks of readiness and response to sudden marine pollution in accordance with the provision of Article 4 of Annex of the Contract concluded in December 2019 with the competent ministry
- Procure and / or rent equipment and vessels that will be available in the event of sudden marine pollution of smaller and larger scale
- The National Intervention Plan and the county intervention plans shall prescribe a step-by-step procedure and keep a log of the course of action for all marine pollution
- County regional centres should make an assessment of the extent of marine pollution for each sudden marine pollution and publish the data on the county's website.

The State Audit Office is of the opinion that the implementation of the above recommendations would increase the efficiency in managing interventions in case of sudden marine pollution in the Republic of Croatia.



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Rijeka Regional Office

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PERFORMANCE AUDIT REPORT

MANAGING INTERVENTIONS IN CASE OF SUDDEN POLLUTION IN THE ADRIATIC SEA

In accordance to the provisions of Articles 19 and 21 of the Law on the State Audit Office (Official Gazette 25/19), an audit of the effectiveness of managing interventions in case of sudden pollution in the Adriatic Sea was performed.

The audit was performed in the manner and according to the procedures established by the Framework of Professional Principles, Standards and Guidelines of the International Organization of Supreme Audit Institutions (INTOSAI) (Official Gazette 17/20) and the Code of Professional Ethics of State Auditors.

Audit has been conducted since 16 January 2020 until 15 March 2021.

AUDIT SUBJECT, AUDITEES AND AUDIT OBJECTIVES

The audit subject is managing interventions in case of sudden pollution in the Adriatic Sea. In this audit, the term managing interventions includes the activities regarding planning, organizing, implementing and reporting on performed tasks of managing interventions in case of sudden pollution in the Adriatic Sea.

The auditees were:

- Ministry of the Sea, Transport and Infrastructure
- Primorje-Gorski Kotar County and
- Split-Dalmatia County.

The audited period was 2017 – 2019 and it included the legislative framework, the organization of the intervention management system, activities in cases of interventions and reporting to the competent authorities on performed procedures.

In order to assess the effectiveness of managing interventions in case of sudden pollution in the Adriatic Sea, the following audit objectives have been set:

- check the legislative framework regarding the managing of interventions in case of sudden pollution in the Adriatic Sea
- check the organization of intervention management in case of sudden pollution in the Adriatic Sea in accordance with regulations
- assess the effectiveness of the system in managing interventions in case of sudden pollution in the Adriatic Sea
- check the activities of the competent authorities in managing interventions in case of sudden pollution in the Adriatic Sea.

AUDIT METHODS

In accordance with international auditing standards, the audit was planned and conducted in a way that provides the necessary evidence and reasonable basis for the audit findings and conclusions and the achievement of audit objectives.

In the planning and preparation of the audit, the regulations, data and business documentation of the competent authorities for managing interventions and other available data were analysed.

In the audit process:

- regulations and professional and other available materials related to the pollution of the Adriatic Sea and its protection were analysed
- business records in connection with the financing and organization of managing interventions in case of sudden pollution in the Adriatic Sea and demonstration exercises were analysed and verified
- interviews were conducted with responsible persons
- explanations of the responsible persons on certain activities related to the actions in cases of interventions and reporting to the competent authorities in the performed procedures were obtained.

AUDIT CRITERIA

To assess the effectiveness of managing interventions in case of sudden pollution in the Adriatic Sea, the criteria arising from laws and other regulations and the activities undertaken in case of sudden pollution of the Adriatic Sea have been established.

The main audit question was:

- **Is the management of interventions in the event of sudden pollution of the Adriatic Sea effective?**

The audit sub-questions were:

- Has a legislative framework been established for the protection and preservation of the marine environment and the prevention and removal of pollution?
- Is the intervention management system in case of sudden pollution in the Adriatic Sea properly organized at the state, county and operational level?
- Is the financing of the intervention management system in case of sudden pollution in the Adriatic Sea adequately regulated?
- Is the action of the competent authorities in case of sudden pollution in the Adriatic Sea effective?

Table 1 provides the criteria for assessing the effectiveness of managing interventions in case of sudden pollution in the Adriatic Sea, according to the areas of audit.

Table 1

Audit criteria for assessing the effectiveness, by areas of audit

Ordinal number	Audit areas	Audit criteria
	1	2
1.	The legislative framework for protection and preservation of the marine environment and the prevention and removal of pollution	<ul style="list-style-type: none"> ○ Republic of Croatia signed international conventions and regional agreements for the protection and preservation of the marine environment ○ Republic of Croatia nationally regulates the protection and preservation of the marine environment and the prevention and removal of pollution ○ Intervention plan for sudden marine pollution has been adopted, which is in line with regulations ○ Intervention plan for sudden marine pollution sets out procedures and measures for anticipating, preventing, limiting, preparedness and responding to sudden pollution in the Adriatic Sea
2.	Intervention management system in case of sudden pollution in the Adriatic Sea	<ul style="list-style-type: none"> ○ bodies responsible for the implementation of the intervention plan in case of sudden pollution have the human and material resources in the case of intervention at sea ○ Headquarters for the protection of sea against pollution and the county operating centres in charge of the implementation of intervention plans in case of sudden marine pollution are established ○ procedures and measures envisaged by the Intervention plan for sudden marine pollution are established ○ management plans in case of sudden marine pollution of counties were adopted and are compliant with the National Intervention Plan ○ relations with legal entities authorized for implementing activities regarding the hazardous waste in case of sudden marine pollution are determined ○ programs and financial plans of the Headquarters and of county operational centres are set

Ordinal number	Audit areas	Audit criteria
	1	2
		<ul style="list-style-type: none"> ○ financial plans of the Headquarters and county operational centres have planned funds for managing cases of sudden marine pollution, in the state and county budgets ○ records on realized expenditures and sources of financing for the implementation of intervention plans at the state and county level are kept ○ procedures for anticipating and measures to prevent and limit marine pollution are being implemented ○ training of persons assigned to participate in intervention plans and demonstration exercises at the national and regional level is carried out
3.	Activities of the competent authorities in managing interventions in case of sudden pollution in the Adriatic Sea	<ul style="list-style-type: none"> ○ intervention measures in case of sudden marine pollution are implemented ○ procedures and measures to respond to a reduction in damage to the marine environment are implemented ○ documentation on the activities of interventions is kept ○ during the intervention, the competent authorities are informed in a timely manner about all implemented measures and their success, ie the damage caused in the marine environment ○ activities by intervention plans are coordinated between the competent authorities that participate in the implementation (Headquarters for the protection of the sea, Maritime Rescue Coordination Centre and the county operating centres)

Managing interventions in case of sudden marine pollution is assessed as **effective** if the intervention plans regarding the sudden marine pollution comply with regulations governing the protection and preservation of the marine environment and pollution prevention and management, if the intervention management system is properly organized at the state, county and operational levels, if the financing of the intervention management system is regulated in a satisfactory manner and if the activities of the competent authorities in case of sudden marine pollution are effective.

Managing interventions in case of sudden marine pollution is assessed as **effective, but need some improvements**, if there are some weaknesses and omissions identified which do not substantially affect the effects of managing interventions in case of sudden marine pollution.

Managing interventions in case of sudden marine pollution is assessed as **partially effective**, if some improvements are needed regarding the intervention plan's compliance with regulations in the protection and preservation of the marine environment and the prevention and elimination of pollution, the organization of managing interventions at the state, county and operational levels, in financing the management of interventions and activities of competent authorities in case of sudden marine pollution.

Managing interventions in case of sudden marine pollution is assessed as **not effective**, if significant improvements are needed in intervention plan's compliance with regulations in the protection and preservation of the marine environment and the prevention and elimination of pollution, the organization of managing interventions at the state, county and operational levels, in financing the management of interventions and activities of competent authorities in case of sudden marine pollution.

LEGISLATIVE FRAMEWORK FOR THE PROTECTION AND PRESERVATION OF THE ADRIATIC SEA FROM POLLUTION

Numerous international, European and national regulations have been adopted for the protection and preservation of marine areas which are important to the Adriatic Sea.

– International conventions

According to the 1982 United Nations Convention on the Law of the Sea (UNCLOS), pollution of the marine environment means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries (a funnel-shaped bay at the mouth of a river wide open to the sea), which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities. The Republic of Croatia is a party to the said Convention on the basis of a notification of succession from October 1991 (Official Gazette - International Agreements 11/95 and 9/00).

The United Nations Environment Program (hereinafter: UNEP) is the leading global environmental authority that sets the global environmental agenda. Within the framework of UNEP, the Mediterranean Action Plan (hereinafter: MAP) was established as the first UNEP initiative to be developed and which became a model for other seas around the world. The Mediterranean countries and the European Community approved the MAP in 1975 as a framework for cooperation in addressing common challenges of marine pollution. As part of the MAP and the Barcelona Convention of 2005, at the 14th meeting of the Parties, the Republic of Croatia together with other members of the MAP adopted the Mediterranean Strategy for Sustainable Development that awards special attention in sustainable development of the Mediterranean to sustainable management of the sea, coastal areas and marine resources. Currently MAP consists of 21 Mediterranean countries and the European Union (the Contracting Parties to the Barcelona Convention). The Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona Convention and its Protocols) was adopted in 1976 and entered into force in 1978. It was amended in 1995 and renamed the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, ratified by the Republic of Croatia in 1998 (Official Gazette - International Agreements 17/98, 12/03 and 13/17). In accordance with the provisions of the said Convention and its Protocols, signatory countries shall take all appropriate measures to prevent, control, mitigate and, as far as possible, eliminate pollution from the Mediterranean Sea and to protect and enhance the marine environment in that area by contributing to its sustainable development. Of the seven protocols adopted, the Republic of Croatia has ratified six protocols to the Barcelona Convention, five of which are in force.

Among the most important international conventions aimed at preserving the marine environment, to which the Republic of Croatia is a party on the basis of the October 1991 succession notification (Official Gazette – International Agreements 1/92), is the International Convention for the Prevention of Pollution from Ships (MARPOL) from 1973, amended by the Protocol of 1978 and 1997, which the Republic of Croatia confirmed by the Regulation on the publication of the 1997 Protocol which amended the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (Official newspaper - International agreements 4/05). It was adopted for the purpose of complete elimination of intentional pollution of the marine environment with oil and other harmful substances and is considered as one of the most important and most comprehensive conventions for the protection and preservation of the marine environment.

Convention which preceded the said Convention is the International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL) adopted in 1954, which has banned ships discharge water contaminated with oil at certain distances from the nearest coast, that is completely banned releases in protected areas and prescribed the obligation of keeping a log of transportation of oils and their products.

Due to the needs of coastal states that they can intervene on the high seas in case of marine pollution, the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (INTERVENTION 1969.) was adopted in 1969. The Republic of Croatia is a party to the said Convention on the basis of a notification of succession from October 1991 (Official Gazette - International Agreements 1/92). According to the said Convention, states may take such measures on the high seas that are required for prevention, mitigation or elimination of a serious and direct threat to the coast. Furthermore, measures can be taken in the case when interests of the coastal state are endangered by potential contamination or due to threat of sea pollution by oil, due to maritime accidents or acts that result in such accidents, and it can be predicted that they will result in major harmful consequences. A maritime accident means a collision of ships, a stranding or navigation incident or other occurrence on or off the ship resulting in material damage or imminent threat that could cause material damage to the ship or cargo.

In order to ensure payment and adequate, prompt and effective compensation for pollution damage caused by leakage or bunker oil discharge from ships made the 2001 the International Convention on Civil Liability for Bunker Oil Pollution Damage (BUNKER) was adopted in 2001. The Republic of Croatia confirmed the Convention by the Law on the ratification of the International Convention on Civil Liability for Bunker Oil Pollution Damage from 2001 (Official Gazette - International agreements 9/06). Bunker oil means all hydrocarbon mineral oils, including lubricating oil, used or intended to be used for the operation or propulsion of a ship, as well as residues of such oil.

International Convention on the Removal of Wrecks (WRC) from 2007, which the Republic of Croatia has ratified by the Act on Ratification of the International Convention of Nairobi on the Removal of Wrecks from 2007 (Official Gazette - International Agreements 3/17) and by the Entry into force of the International Convention of Nairobi on the Removal of Wrecks from 2007 (Official Gazette - International Agreements 8/17), prescribes uniform international rules and procedures to ensure the rapid and efficient removal of wrecks that may pose a threat to the safety of navigation and the marine environment and the payment of the costs of wreck removal whose remediation often requires a large financial cost. A wreck, as a result of a marine casualty, means a sunken or stranded ship or any part of a sunken or stranded ship, including any object which is or was on such a ship or any object which is from a ship which is stranded, sunk or floats lost at sea or a ship which is likely to sink or run aground or which can reasonably be expected to sink or run aground, where effective rescue measures for the ship or any endangered property have not yet begun.

International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (LC 1972) was adopted in 1972, and the Republic of Croatia is a party to the said Convention on the basis of notification of succession from October 1991 (Official Gazette - International Treaties 3/95). Dumping or sinking of wastes or other matter means any intentional dumping of waste or other matter from vessels, aircraft, platforms or other man-made objects at sea and any intentional sinking of ships, aircraft, platforms and other objects placed at sea.

Furthermore, on the basis of the said Convention, Contracting States should individually and jointly promote effective control of all sources of pollution of the marine environment and shall in particular endeavour to take all necessary prevention steps to prevent pollution of the sea by the disposal of waste and other substances.

In order to increase the safety of navigation, the Convention on the International Regulations for Preventing Collisions at Sea (COLREG) was adopted in 1972. The Republic of Croatia is a party to that Convention on the basis of a notification of succession in October 1991 (Official Gazette - International Agreements 1/92). The provisions of the Convention include international rules for the regulation of maritime traffic, and should be applied to all ships on the high seas and in all waters which are connected with the high seas and navigable by ships. Also, one of the most important international conventions on maritime safety at sea is the International Convention for the Safety of Life at Sea (SOLAS), adopted in 1974, and its amendments according to protocols from 1978 and 1988, whose provisions regulate the issues of the safety of navigation at sea and minimum safety standards in the construction, equipment and operation of merchant ships. The Republic of Croatia is a party to the above Convention and the Protocol of 1978, on the basis of notification of succession from October 1991 (Official Gazette - International Agreements 1/92) and ratification of the Protocol adopted in 1988 under Regulation on Accession to Protocol of 1988 to the International Convention for the Safety of Life at Sea, 1974 (Official Gazette - International Agreements 13/99).

The International Convention on Maritime Search and Rescue (SAR) of 1979 was ratified by the Republic of Croatia by the Act on the Ratification of the International Convention on Maritime Search and Rescue, 1979 (Official Gazette - International Agreements 14/96). The aim of this Convention is to develop an international plan for maritime search and rescue and to improve cooperation between search and rescue organizations in the world and among participants in maritime search and rescue operations. The coastal States Parties to the Convention must ensure that the necessary measures are taken to establish an appropriate search and rescue service for persons at risk at sea near their shores.

International Convention on Oil Pollution Preparedness, Response and Co-operation from 1990 (OPRC), ratified by the Republic of Croatia by the Act on Ratification of the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (Official Gazette - International Agreements 2/97), emphasizes the importance of assistance and cooperation of States in the event of sudden marine pollution, which include the exchange of information on the ability of States to respond to oil pollution incidents, the preparation of emergency plans, the exchange of reports on major accidents that may harm the marine environment or coast, and related interests of States as well as scientific research and development programs in the field of measures to combat pollution of the marine environment with oil. Among other things, under the provisions of the said Convention, the signatory state is obliged to establish a national system for rapid and effective action in the event of oil pollution accidents. Such a system must include at least the competent national authority or authorities responsible for oil pollution preparedness and action, the national operational centre or liaison centres, which will be responsible for receiving and transmitting the oil pollution report, the body authorized to request assistance on behalf of the State or decide on the provision of assistance when it is requested. National plan on preparedness and response action in an emergency should include organizational relationship between the various public or private bodies, which take part in it, taking account of the instructions that are established by the International Maritime Organization (hereinafter: IMO).

Likewise, each State Party shall, within its capabilities, individually or through bilateral or multilateral cooperation and, where possible, in cooperation with the oil and shipping industry, port authorities and other relevant organizations, determine the minimum quantities of stockpiles of oil spill combating equipment, tailored to existing hazards, as well as programs for their use, the holding of oil spill combating exercises and training of appropriate personnel, detailed plans and constantly available communication opportunities to respond to the incident with oil pollution. Each State Party shall ensure that current information, directly or through appropriate regional organizations, is provided to the IMO.

According to the International Convention on Civil Liability for Oil Pollution Damage (CLC) adopted in 1969, the State Parties to the Convention agreed on international rules and procedures for the determination of liability and providing adequate compensation in cases of damage due to pollution of the marine environment created by the discharge of oil from ships. The International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage was adopted at a conference held in Brussels in 1971 as a supplement to the International Convention on Civil Liability for Oil Pollution Damage from 1969 (CLC).

The objectives of the Convention are to provide compensation for pollution damage when such compensation cannot be achieved or is not sufficient under the 1969 Convention on Civil Liability for Oil Pollution Damage and to relieve ship owners of additional financial burden. The Fund pays a compensation to natural and legal persons who suffer pollution damage, if such persons are unable to obtain appropriate compensation in full under the terms of the Convention on Civil Liability for Oil Pollution Damage from 1969. Funds of the Fund are collected through contributions that importers of oil in the member states of the Convention are obliged to pay according to the established criteria from the said Convention. The 1992 Protocol ("the 1992 Liability Convention") supplemented and amended the 1969 International Convention on Civil Liability for Oil Pollution Damage. The 1992 Liability Convention extended the application of the 1969 Convention, except to the territory of the country and the territorial sea and to the exclusive economic zone of a Contracting State, or to an area outside the territorial sea, but not more than 200 nautical miles from the baseline from which the breadth of its territorial sea is measured. It also expands the scope of liability for ship owners for damage from pollution caused by their ships. Also, during 1992, a Protocol amending the provisions of the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage from 1971 (hereinafter: the 1992 Fund Convention) was adopted. Based on the above Protocol an international fund for compensation for pollution was established, called the International Fund for compensation for Oil Pollution Damage, 1992. Protocol of 2003 established the international supplementary fund for compensation for pollution damage under the name International Oil Pollution Compensation Supplementary Fund. Only the member states of the International Fund for Compensation for Oil Pollution Damage from 1992 can access the said Supplementary Fund. The Fund will pay compensation to all natural and legal persons who suffer pollution damage if such persons are unable to obtain full and adequate compensation for the established claim for such damage under the provisions of the Convention on the Fund from 1992. In 1998 The Republic of Croatia adopted a decision on cancellation of the International Convention on Civil Liability for Oil Pollution Damage from 1969 and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage from 1971 (Official Gazette - International Agreements 6/98). In order to protect the Adriatic Sea, the Republic of Croatia ratified the 1992 Liability Convention and the 1992 Fund Convention and is a member of the International Supplementary Fund according to the Protocol from 2003 (Official Gazette - International Agreements 2/97, 12/05).

A single system of liability for oil pollution of the sea in the world has not yet been established, given that not all states have accepted or ratified these conventions. The issue of liability and compensation for damage to the sea by oil pollution in states that have not accepted international conventions is resolved on the basis of the provisions of their national laws.

– Regulations and directives of the European Union

All regulations at European Union level apply automatically and uniformly to all Member States. Directives require Member States to adopt measures to incorporate them into national law (transpose) in order to achieve the objectives set by the directive. The Republic of Croatia has been a member of the European Union since July 2013.

The European Parliament and the Council of the European Union (hereinafter: the Council) adopted Regulation (EC) No 1406/2002 establishing the European Maritime Safety Agency (hereinafter EMSA) in June 2002 in order to ensure a high, uniform and effective level of maritime safety and the prevention of pollution by ships within the European Union. EMSA provides the necessary technical and scientific assistance to the Member States and the Commission and ensures a high level of expertise, to help them in the implementation of EU legislation in the field of maritime safety and the prevention of pollution from ships, monitoring its implementation and evaluating the effectiveness of the measures taken.

EMSA has the ability to visit the Member States with the intention of monitoring the overall functioning of the EU system for the safety of navigation and prevention of pollution.

In order to guarantee the full autonomy and independence of EMSA, in July 2014 the European Parliament and the Council adopted Regulation (EU) No 911/2014 of the multi-annual financing of EMSA activity in the field of response to marine pollution from ships and oil and gas facilities (for the period from 2014 to 2020), on the basis of which funds in the amount of EUR 160,500,000 were provided to EMSA. Within the limits of the multi-annual financial framework, EMSA shall be allocated the resources necessary to meet its obligations in the field of response to marine pollution from ships and oil and gas installations in an efficient and cost-effective manner.

The European Parliament and the Council in June 2012 adopted Regulation (EC) No 530/2012 of the rapid gradual introduction of the double hull or equivalent design requirements for oil tankers with the single hull. The purpose of this Regulation is to establish an accelerated phasing-in program for double-hull or equivalent design requirements under the MARPOL Convention, for single-hull oil tankers and to prohibit the transport of heavy oil fractions in single-hull oil tankers to or from Member States' ports.

In June 2002, the European Parliament and the Council passed the Directive 2002/59/EC establishing a system of traffic monitoring and information system of the European Union and repealing Council Directive 93/75/EEC. The purpose of this Directive is to establish a system for vessel traffic monitoring and notification with the aim to strengthen the safety and efficiency of maritime traffic, improving the response of the competent authorities in the event of disasters, accidents or potentially dangerous situations at sea, including procedures for search and rescue operations and contribute to the prevention and detection of the pollution from ships. Member States shall monitor and take all necessary and appropriate measures to ensure that captains, ship owners or ship agents, as well as shippers or owners of dangerous or polluting goods carried on such ships, comply with the requirements of this Directive.

Several mandatory ship reporting systems have been established along European coasts, in accordance with the relevant regulations issued by the IMO. Under the provisions of said Directive, Member States must monitor and take all necessary and appropriate measures to ensure that all ships entering the area of the ship reporting system report the required information. Every passenger ship regardless of size, and all ships of 300 gross tons or more that dock in the port of a Member State, should have an automatic identification system (hereinafter: AIS system).

Ships equipped with an AIS system must have this system switched on at all times, unless international agreements, rules or standards provide for the protection of navigation data. Member States shall monitor and take all necessary and appropriate measures to ensure that all ships entering the area of the mandatory system of directed and separate navigation use the system in accordance with the relevant recommendations and criteria developed by the IMO. Where Member States implement, on their own responsibility, a directed and separate navigation system not adopted by the IMO, Member States shall take into account, whenever possible, the guidelines and criteria developed by the IMO and make public all information necessary for the safe and efficient use of the system of directed and separate navigation. Member States must monitor and take all necessary and appropriate measures to ensure that ships entering the maritime traffic management scope of the Vessel Traffic System (hereinafter: VTS), operated by one or more States, of which at least one is a Member State, within their territorial sea, and based on guidelines developed by the IMO, participate in the VTS and respect its rules. Also, they must monitor and take all necessary and appropriate measures to ensure that the ships flying the flag of a Member State or ships sailing towards the port of a Member State and falling within the scope of such a VTS outside the territorial sea of Member States, which is based on guidelines developed by the IMO, in accordance with the rules of that VTS, and that ships flying the flag of a third country and not en route to a port of a Member State entering the VTS area outside the territorial sea of a Member State comply with the rules of that VTS -and, whenever possible. Member States must report to the State concerned of the flag ship of any obvious and serious infringement of those rules in such a VTS area. Member States must ensure that coastal stations in charge of monitoring compliance with maritime surveillance and management systems and navigational and segregated systems have sufficient qualified personnel, as well as appropriate means of communication and monitoring of the ship, and work in accordance with the relevant IMO guidelines. Member States shall monitor and take all necessary and appropriate measures to ensure that passenger ships and cargo ships of gross tonnage between 3 000 and more that dock in port of a Member State have a system for recording data on navigation Voyage Data Recorder (hereinafter: VDR) in accordance with the provisions of the Directive. Data collected by means of VDR systems must be accessible to the Member State concerned in the event of an investigation following the accident which occurred in the waters under the jurisdiction of the Member State. Member States shall ensure that this information is used in the investigation and analysed accordingly. Member States shall ensure that the findings of the investigation are published as soon as possible after its conclusion.

In September 2005 the European Parliament and the Council passed the Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements. The purpose of this Directive is to incorporate international standards for ship-source pollution in the law of the European Union and ensure that persons responsible for discharges receive appropriate sanctions, which would contribute to improving maritime safety and better protection of the marine environment from ship-source. Member States shall take the necessary measures to ensure that infringements due to the release of polluting substances from ships are subject to effective, proportionate and dissuasive sanctions, which may include criminal and administrative sanctions.

Each Member State shall take the necessary measures to ensure that sanctions apply to every natural and legal person for whom liability is established. This Directive does not prevent Member States from taking more stringent measures against ship-source pollution in conformity with international law. The Directive applies to discharges of polluting substances from any ship, regardless of flag, with the exception of any warship, naval auxiliary or other ship owned or operated by the State and used at a given time exclusively for the public non-commercial service. If irregularities or information give rise to a suspicion that a ship voluntarily in a port or offshore terminal of a Member State has been or is involved in the discharge of polluting substances in those marine areas, that Member State shall ensure that appropriate inspections are carried out in accordance with its national rules, taking into account appropriate guidelines adopted by the IMO.

In June 2013, the European Parliament and the Council adopted the Directive 2013/30/EC on the safety of offshore oil and gas activities and amending Directive 2004/35/EC. The aim of this Directive is to reduce as far as possible the frequency of major accidents involving offshore oil and gas activities and to limit their consequences, thereby improving the protection of the marine environment and coastal economies from pollution, establishing minimum conditions for safe oil and gas exploration and exploitation and limiting possible disruptions of domestic energy production in the Union and to improve disaster response mechanisms. Major accidents related to offshore oil and gas activities can have devastating and irreversible consequences for the marine and coastal environment, as well as significant negative effects on coastal economies.

– Regulations in the Republic of Croatia

The Republic of Croatia adopted the regulations that relate to the preservation of the marine environment, establishing accountability and compensation for the damage and interventions in the sea in order to protect from pollution in accordance with international conventions. Regulations governing this area are: the Environmental Protection Act (Official Gazette 80/13, 153/13, 78/15, 12/18 and 118/18), the Maritime Code (Official Gazette 181/04, 76/07, 146/08, 61/11, 56/13, 26/15 and 17/19) and the Maritime Domain and Seaports Act (Official Gazette 158/03, 100/04, 141/06, 38/09, 123/11 - Decision and Ruling of the Constitutional Court of the Republic of Croatia, 56/16 and 98/19).

According to the provision of Article 4, points 36 and 37 of the Environmental Protection Act, pollution of the marine environment means direct or indirect intake, by man, of substances or energy into the marine environment, which causes or may cause detrimental effects on living conditions of flora and fauna in the sea and the sea subsoil, or endanger living conditions in the sea in general and endanger human health and may interfere with maritime activities, including fishing and other legitimate uses of the sea and submarine, cause deterioration in the usable quality of seawater and reduce the attractiveness of the marine environment. A polluter is any natural or legal person who, by direct or indirect action, or by failing to act, causes environmental pollution. According to the provisions of Article 47 of the Maritime Code, navigation safety and protection against pollution from maritime facilities regulated by this Act refers to the basic conditions that must be met by: waterways and navigation facilities in inland waters and in the territorial sea of the Republic of Croatia, hydrographic activity, search and rescue of persons in danger at sea, surveillance and management of maritime traffic, coastal radio stations, maritime meteorological and hydrological service, ports, maritime facilities of Croatian nationality as well as vessels navigating inland waters and the territorial sea and economic zone of the Republic of Croatia, in accordance with international law, crews at sea facilities, navigation and pilotage at sea and supervision of the implementation of the provisions of the said law.

Pursuant to the provisions of Article 49a of the Maritime Code, ship's captain, members of the ship's crew, the person operating the boat or yacht and crew members of the boat or yacht, and crew members or professional workers on fixed offshore and floating facilities must, when navigating or staying in inland waters, territorial sea, continental or economic zone of the Republic of Croatia comply with international, European and Croatian regulations and standards on protection against marine and air pollution from maritime facilities and pollution caused by immersion from maritime facilities. Furthermore, according to the provisions of Article 49g of the said Code in case of marine pollution, the Harbour Master's Office shall prohibit the departure of the vessel from the port, ie order the retention of the vessel that caused pollution in the sea waters of the Republic of Croatia until the vessel has covered pollution costs and other pollution damage or it has provided an adequate guarantee to cover these damages.

The resulting damage should be determined and assessed, if possible, in the presence of the perpetrator of the pollution, and if necessary in the presence of experts and witnesses. A report shall be made on the performed inspection. Whoever causes damage to the marine environment is obliged to compensate it. Damage means property damage and environmental damage. Environmental damage is a special type of damage that results in the destruction of the environment, nature and the landscape. The criteria for determining the ecological damage are: preservation and originality of nature, the degree of legal protection, the beauty of the landscape, the possibility of restitution, the richness of flora and fauna and the like. Environmental damage is compensated even when nature is not intact, to an appropriate extent. Furthermore, according to the provisions of Article 49h of the Maritime Code, the Harbour Master's Office is obliged to report the marine pollution to the competent county authority in order to take appropriate measures, and the competent county authority is obliged to take all necessary measures to prevent the spread of pollution and to eliminate pollution as determined by the Sudden Marine Pollution Intervention Plan. The intervention plan for sudden marine pollution, including the system of equipment and training for its implementation, shall be prescribed by the Government of the Republic of Croatia.

According to Article 55a of the Maritime Code, search and rescue operations of persons in distress at sea include: constant watch and communication, coordination of search and rescue operations, the implementation of search and rescue operations, the provision of services of telemedicine advice, providing emergency medical assistance, medical evacuation from maritime facilities, training of officers involved in conducting search and rescue operations.

Pursuant to Article 55f of the Maritime Code, procedures and measures for forecasting, preventing, limiting, preparedness and interventions in case of sudden marine pollution, reduction of damage to the marine environment and elimination of consequences of damage in order to protect the marine environment and coastal area in inland waters, territorial sea and the seabed and subsoil of these areas, as well as the protected ecological-fishing zone and the continental shelf and other areas of the sea over which the Republic of Croatia is obliged to carry out such procedures and measures in accordance with international agreements are determined by the Intervention Plan. The said plan determines: the rights and obligations of entities required to implement the procedures and measures, the authority in connection with the implementation of measures and the responsibility and authority to act and manner of management, coordination and command.

Furthermore, it determines rights and obligations of coastal counties and local government units that are required to implement the procedures and measures, the manner and conditions of the implementation of readiness, activation and action of operational forces and other participants in interventions. Also, it determines the manner and conditions of professional training and professional training programs for participants in the implementation of procedures and measures, equipment and use of material, technical and other means, implementation of procedures and measures as determined by a special regulation on safety in offshore exploration and exploitation of hydrocarbons, manner of maintaining order and safety in interventions, manner and terms of securing financial resources and other.

The provisions on the content and manner of adopting the Intervention Plan for Sudden Marine Pollution from the regulations governing safety in offshore exploration and exploitation of hydrocarbons and the regulations governing environmental protection shall also apply to the Intervention Plan.

According to the provisions of Article 55g of the Maritime Code for harmonized and effective implementation of the said measures, the Croatian Government establishes the Headquarters for the Protection of Sea against Pollution (hereinafter: the Headquarters). Members and deputy members of the Headquarters are appointed by the Government of the Republic of Croatia from among the central state administration bodies responsible for: the sea, environmental protection, nature protection, internal affairs, water management, foreign affairs, finance, protection and rescue and defence. The Commander of the Headquarters is a representative of the central state administration body responsible for maritime affairs. The members and deputies of the Headquarters and the Commander of the Headquarters do not receive remuneration for their work. All state administration bodies and public authorities, ship owners or owners of maritime facilities and bodies managing ports that have the capacity and can contribute to the implementation of these measures, as well as persons responsible for offshore hydrocarbon exploration and exploitation are obliged to take these measures in accordance with the Intervention Plan for Sudden Marine Pollution.

According to the provisions of Article 55h of the Maritime Code, for the effective implementation of procedures and measures for prediction, prevention, restriction, readiness and intervention in case of sudden marine pollution, reducing damage to the marine environment and the elimination of consequences of damage in order to protect the marine environment representative body of a coastal county shall bring county intervention plan in case of sudden marine pollution with the prior approval of the Ministry of Sea, Transport and Infrastructure (hereinafter: the Ministry).

Pursuant to the provisions of Article 56a of the Maritime Code, it is determined that port authorities and special purpose port concessionaires are obliged to ensure that the port is equipped with appropriate equipment and devices for handling and receiving solid and liquid waste, cargo residues from vessels, oily water and faeces as defined by the amendments to the MARPOL Convention. Also, pursuant to the provisions of Article 58 of this Code, the managing body of the port is required to maintain the cleanliness of the port of items that threaten the safety of navigation or pollute the sea and immediately undertake the extraction or removal of a wreck or a sunken item located in the port area in accordance with the provisions of this law and the conditions of extraction or removal determined by a decision of the competent Harbour Master's Office. Furthermore, it is obliged to take measures without delay to prevent the spread of pollution and the elimination of pollution, as set out in the Intervention Plan for Sudden Marine Pollution.

Pursuant to the provisions of Article 1 of the Maritime Property and Seaports Act, water regulations and environmental protection regulations apply to the protection of the sea coast and the sea from pollution, except for pollution from vessels and floating structures. According to the provisions of Article 91 of this Act, in the case of marine pollution, port authority is authorized to forbid sailing out of the vessel from the port, or to order the retention of the vessel which caused pollution in the waters of the Republic of Croatia while a vessel does not cover the cost of removing harmful substances from the maritime domain and other damage caused by pollution or until it provides a satisfactory guarantee to cover these damages. Furthermore, according to the provisions of Article 92 of the said Act, when receiving a notification on maritime domain pollution, the Harbour Master's Office is obliged to immediately conduct an inspection, determine the condition and the cause of pollution and, if possible, the amount of damage. Furthermore, the damage caused should be determined, if possible, in the presence of the perpetrator of the pollution, and if necessary in the presence of experts and witnesses. A report shall be made on the performed inspection. The Harbour Master's Office is obliged to report the pollution to the competent authority of the county in order to take appropriate measures for the removal of harmful substances from the maritime domain.

According to the provisions of Article 55 of the Environmental Protection Act, the Intervention plan for sudden marine pollution is an environmental protection document, and according to the provisions of Article 57 of the said Act, Intervention Plan shall establish procedures and measures for prediction, prevention, restriction, readiness for and responding to sudden marine pollution to protect the marine environment and the coastal area. The Intervention plan is based on the assessment of risks and threats of marine pollution which is made for a period of ten years. The Intervention plan and its amendments in accordance with this Act regulating the protection and preservation of natural marine resources and the marine environment and a special regulation on safety in offshore exploration and exploitation of hydrocarbons shall be proposed by the ministry responsible for maritime affairs in cooperation with the central state administration body responsible for environmental protection, and is adopted by the Government of the Republic of Croatia. Furthermore, the said Intervention Plan is adopted in accordance with the Act on Ratification of the Agreement on the Sub-regional Contingency Plan for Prevention of, Preparedness for and Response to Major Marine Pollution Incidents in the Adriatic Sea (Official Gazette - International Agreements 7/08), which established a mechanism for cooperation between Member States or third countries.

In July 2008, the Government of the Republic of Croatia adopted the Intervention Plan for Sudden Marine Pollution (Official Gazette 92/08) (hereinafter: the National Intervention Plan). The general provisions state that the National Intervention Plan is a document of sustainable development and environmental protection which sets out procedures and measures for anticipating, preventing, limiting, preparing for and responding to sudden marine pollution and extraordinary natural events in the sea to protect the marine environment. The National Intervention Plan is harmonized with international agreements in the field of protection of the marine environment to which the Republic of Croatia is a party. According to the National Intervention Plan, the types of risks and threats of marine pollution are possible events or situations that may cause damage to the marine environment. Types of risks and threats of marine pollution are: accidents at sea which include shipwreck, stranding, fire, explosion, structural failure, accident while operating a ship or other event on or off the ship, and accidents on offshore maritime facilities, accidents on submarine pipelines, sunken ships and aircraft, an extraordinary natural event at sea, the crash of aircraft and helicopters into the sea and accidents at coastal installations and terminals.

The National Intervention Plan is partly not in compliance with the Maritime Code with regard to the Act on Amendments to the Maritime Code (Official Gazette 17/19) according to which the content of the National Intervention Plan is determined in more detail. Among other things, the National Intervention Plan should determine the professional training programs for participants in the implementation of procedures and measures, the manner and conditions of equipping and use of material, technical and other means, implementation of procedures and measures as determined by a special regulation on safety in offshore exploration and exploitation of hydrocarbons, and the manner of maintaining order and safety in interventions. Also, according to the amendments to the above Code, in the implementation of the National Intervention Plan participate, among others, the port authorities and special purpose ports concessionaires, which is not prescribed by the National Intervention Plan. According to information from the Ministry, a working group has been established to draft a new intervention plan, and a new National Intervention Plan is planned to be drafted during 2021.

The National Audit Office recommends the Ministry to determine, by the National Intervention Plan, the manner and conditions of professional training and professional training programs of participants in the implementation of procedures and measures, manner and terms of equipping and use of material, technical and other means, manner and conditions for the implementation of procedures and measures in offshore research and exploitation of hydrocarbons and the manner of maintaining order and safety in interventions.

Furthermore, the National Audit Office recommends to determine in the National Intervention Plan the manner in which special purpose ports concessionaires and port authorities should participate in the implementation of the National Intervention Plan, considering the fact that according to the provisions of the Maritime Code they are obliged to immediately take measures to prevent the spread of contamination and eliminate pollution.

MANAGING INTERVENTION SYSTEM IN CASE OF SUDDEN POLLUTION IN THE ADRIATIC SEA IN THE REPUBLIC OF CROATIA

The competent authorities that participate in the implementation of the National Intervention Plan are: Headquarters, Maritime Rescue and Coordination Centre in Rijeka (hereafter: National Centre) and the county regional centres.

The Headquarters is the body responsible for the implementation of procedures and measures for forecasting, preventing, limiting, preparing for and responding to the National Intervention Plan and the Sub-regional Intervention Plan for preventing, preparing for and responding to major sudden pollution of the Adriatic Sea (hereinafter: Sub-regional Plan). Members and deputy members of the Headquarters are appointed by the Government of the Republic of Croatia from the central state administration bodies responsible for: sea, environmental protection, nature protection, internal affairs, water management, foreign affairs, finance, protection and rescue and defence and representatives of the National Centre. The number of members and deputies from the mentioned areas has not been determined. Commander of the Headquarters is the representative of the central state administration in charge of the sea, and his deputy, the head of the National Centre.

The headquarters of the Headquarters is in the central state administration body responsible for the sea. The administrative tasks of the Headquarters are performed by the Secretariat with its seat in the central state administration body responsible for the sea, and the operational activities of the Headquarters are performed by the National Centre in Rijeka. The decision on the activation and termination of action according to the National Intervention Plan or on activation and termination of coordinating activities of the National Centre is made by the Headquarters if pollution by hazardous and noxious substances or by extraordinary natural event in the sea can threaten the marine environment, human health and economic use of the sea and can have consequences for two or more counties or when the amount of oil and/or oil mixture contamination is greater than 2 000 m³. Command operation is conducted by the Headquarters and coordinating activities of National Centre in Rijeka in cooperation with regional centres.

As an exception, due to the need for urgent action in case of sudden marine pollution, the commander of Headquarters can make the decision on the activation of the National Intervention Plan without prior approval of Headquarters with the convening members of the Headquarters command. The commander of Headquarters shall inform the other members of the Headquarters about the decision on the activation of the National Intervention Plan within a period of 24 hours.

After the decision on the activation of the National Intervention Plan has been made, members of the Command Headquarters shall by order of the commander of Headquarters gather at the seat of the National Centre as soon as possible. Supervision over the operational activities according to the National Intervention Plan at the pollution site is carried out by the competent inspector of the Harbour Master's Office and the environmental protection inspector. The Headquarters may request expert support advice from other central state administration bodies, institutions, organizations, as well as legal entities and experts from the list located in the Headquarters Command and Secretariat.

The National Centre is the body responsible for the operational activities of the Headquarters and the coordination of the Headquarters and regional centres in the event of sudden marine pollution in the Republic of Croatia. Its main tasks are operational action according to the National Intervention Plan and coordinating action according to county intervention plans.

In case of activation of the National Intervention Plan or County Intervention Plans, the head of the National Centre or his deputy is responsible for the implementation of the body's tasks. The National Centre also operates if marine pollution may endanger the marine environment, human health or the economic use of the sea in the area of several regional centres or exceeds the possibility of operating of one regional centre and coordinating regional centre (when operating in two or more counties). The National Centre coordinates, and the operational activities are taken over by the Regional Centre of the Primorje-Gorski Kotar County for the area of Istria, Primorje-Gorski Kotar, Lika-Senj and Zadar County, and the Regional Centre of the Split-Dalmatia County for the area of Šibenik-Knin, Split-Dalmatia and Dubrovnik-Neretva counties.

Also, in case of pollution in the Protected Ecological-Fishing Zone (hereinafter: ZERP), and if necessary in the territorial sea and inland waters, the National Centre proposes to the Headquarters the activation of the Coast Guard which can, for the purpose of the National Intervention Plan, hire legal entities specialized for interventions on the high seas (towing, firefighting, installation of dams, etc.) in order to implement measures to prevent and limit marine pollution and intervention measures in case of sea pollution by order of the Commander of the Headquarters.

Regional centre is the body responsible for the implementation of procedures and measures for anticipation, prevention, limiting, readiness for and response to the county intervention plan and for operational participation in the implementation of the National Intervention Plan and the Sub-regional Plan. The area of operation of the county intervention plan corresponds to the boundaries of the county. Members and deputy members of regional centre are appointed by the county prefect from the county administrative bodies responsible for marine protection, environmental protection, protection and rescue and internal affairs, representatives of the Harbour Master's Office and from scientific and professional institutions. The number of members and deputies from the mentioned areas has not been determined.

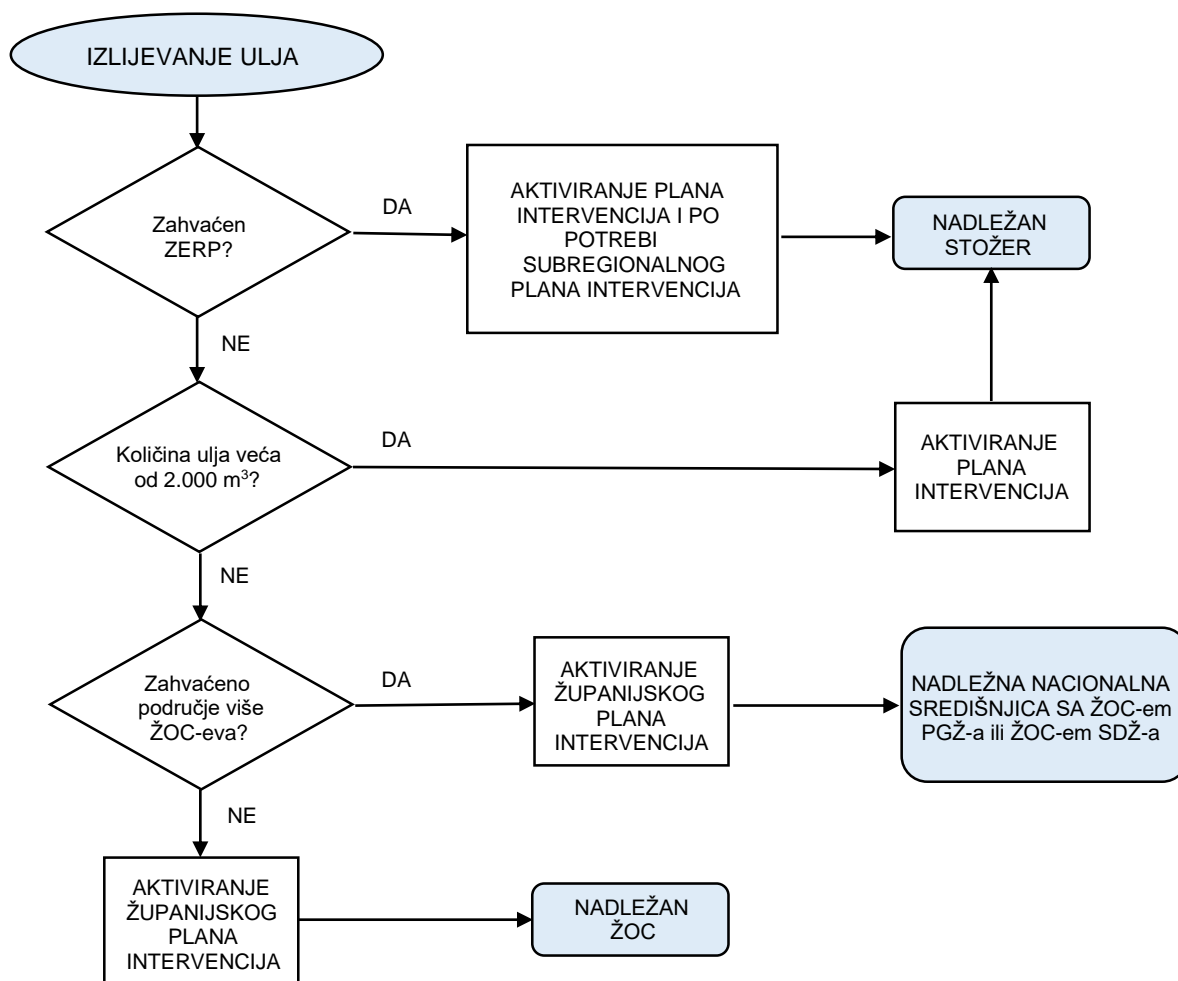
The commander of the regional centre is the port captain, and the deputy is a representative of the County Police Administration - Border Sector. The headquarters are located in the Harbour Master's Office. The secretariat is performed by the county administrative body responsible for marine protection. Regional centre acts if pollution endangers or may endanger the marine environment, human health or commercial use of the sea in the area under jurisdiction of the regional centre and when the amount of oil and/or oil mixture is up to 2 000 m³ and in case of an extraordinary natural event of a smaller extent and intensity. For the mentioned pollution with oil and / or oil mixture, for smaller extent and intensity of extraordinary natural event in the sea, the county intervention plan for sudden sea pollution is applied, which, with the prior consent of the central state administration body for environmental protection, is adopted by the county representative body.

County intervention plans were adopted by all coastal counties (Istria, Primorje-Gorski Kotar, Lika-Senj, Zadar, Šibenik-Knin, Split-Dalmatia and Dubrovnik-Neretva counties).

If the pollution endangers or may endanger the marine environment, human health or economic use, it must be within the scope of several regional centres or if it exceeds the possibility of one regional centre, the coordinating action shall be taken over by the National Centre in cooperation with the Primorje-Gorski Kotar County Regional Centre or Split-Dalmatia County Regional Centre. Supervision over the operational activities according to the county intervention plans at the place of pollution is carried out by the competent inspector of the Harbour Master's Office and the inspector of environmental protection.

Graphic display 1

Diagram of the activation of the Headquarters, National Centre and regional centres in the case of oil spill in the sea



Source: Contingency plan for sudden marine pollution

The implementation of the National Intervention Plan involves professionally and technically qualified legal entities and natural persons – craftsmen to eliminate the consequences of sudden marine pollution, who are registered under special regulations and who have a permit for hazardous waste management and consent to monitor the state of the marine environment. The list of the above legal entities and natural persons – craftsmen and their equipment and assets, is in the headquarters of the Headquarters and is published on the website of the central state administration body responsible for the sea. For the removal of pollution on the coast caused by sea pollution, by order of the Headquarters and the Regional Centre, the Civil Protection is included, and if necessary, volunteers can be included.

The National Intervention Plan also includes procedures for forecasting and measures to prevent and limit the risk of marine pollution, as well as procedures and measures for responding to the reduction of damage to the marine environment. Forecasting procedures include: monitoring the state of the marine environment, declaring and managing areas of particularly sensitive sea, providing maritime traffic control systems, providing technical means and services for implementing measures to prevent and limit marine pollution, and assessing the risks and vulnerabilities of the National Intervention Plan.

Measures to prevent and limit the risk of marine pollution include: identifying, reducing and eliminating the risk of marine pollution.

Procedures and response measures to reduce damage to the marine environment include procedures and measures related to notification, activation of action under the National Intervention Plan and county intervention plans, and action under the Sub-regional Plan.

The National Intervention Plan envisages the implementation of intervention measures in emergencies of marine pollution, namely: in case of oil spills and / or oil mixtures, in case of pollution by dangerous and harmful substances and in case of extraordinary natural event in the sea. Areas of priority in implementation of the National Intervention Plan, termination of action under the National Intervention Plan and documentation on action under the National Intervention Plan have also been determined.

All persons designated to participate in the National Intervention Plan must be professionally trained to implement it. The training is carried out in courses and demonstration exercises at the national and regional level organized by the Headquarters or regional centres and at the international level where they are organized through the implementation of the Sub-regional Plan or are organized by international organizations.

Since the Headquarters and regional centres are not legal entities, their administrative tasks are performed by the Ministry and regional government units (seven counties that have access to the Adriatic Sea: Istria, Primorje-Gorski Kotar, Lika-Senj, Zadar, Šibenik-Knin, Split-Dalmatia and Dubrovnik-Neretva), in accordance with the regulations, and provide the necessary financial resources from the state budget and the budgets of these counties.

The National Intervention Plan is financed from the state budget and from compensation for pollution costs per known polluter. The main source of funding for the county intervention plans of these coastal counties is their budget. According to the National and County Intervention Plans, the polluter bears the costs of polluting the marine environment.

Scope of application intervention plans and pollution risk assessment

The surface of the Adriatic Sea is 138,595 km². The Adriatic Sea is predominantly closed sea connected only to the Ionian Sea, which makes it extremely environmentally sensitive.

According to the Strategy of sustainable development of the Republic of Croatia (Official Gazette 30/09), the Adriatic Sea is of great importance for the Republic of Croatia both in economic and transport terms (maritime transport, construction of transport and communal infrastructure, tourism and nautical tourism, economic activities related to fisheries) and in terms of protection and preservation of the marine environment. Croatian islands include almost all the islands of the eastern Adriatic coast and its central part, making it the second largest archipelago in the Mediterranean. According to the Island register Croatian archipelago consists of 1 244 islands, islets, cliffs and reefs. The islands cover 3 259 km², or 5.8% of Croatian land thus considerably contributing to increase of the surface area of the territorial sea. One of the most important economic branches of the Republic of Croatia is tourism. During the tourist season, the coastal area and islands are exposed to a special load. Tourism is the main driver of economic activity in the area, with the constant growth in the number of tourists of around 3,0 % per year.

The development of nautical tourism for certain coastal and island communities has a number of positive economic effects: generating additional income for the local population, greater employment opportunities, general increase in standards, reducing emigration, revitalization of various activities specific to the region and more. In addition to positive economic effects, nautical tourism also carries a heavy burden on the marine environment and the coastal area.

The most valuable, but also the most sensitive natural systems of the Republic of Croatia are located in the area of the Adriatic Sea, its coast and islands. This is an area where processes that depend on the interaction of sea and land take place, and development pressures and negative impacts on natural systems are most pronounced.

The Adriatic Sea is a unique and very sensitive marine ecosystem that differs from the rest of the Mediterranean Sea in terms of its hydrographic, oceanographic, biological, biogeographical and other characteristics. The Adriatic Sea is characterized by the richness of life, purity, transparency and landscape. Precisely because of its specific characteristics, the Adriatic Sea has the status of a special sub-region within the Mediterranean Sea. Coastal areas are also characterized by a high degree of biodiversity, including many endemic species, particularly sensitive habitats and ecosystems. They are equally important because of the highly developed economy, cultural and social life. Consequently, special attention should be paid to the Adriatic Sea in terms of its use and conservation. Ecosystem loads of the Croatian part of the Adriatic Sea by certain pollutants (illicit/increased concentrations of phosphorus and nitrogen, heavy metals, organic and faecal pollution) are more pronounced near major port cities and large river deltas, but are also significant in smaller towns because of porous septic tanks and poor sewerage system. In the rest of the Croatian Adriatic, the loads of illicit / harmful substances are relatively low and the situation is satisfactory for the Adriatic Sea as a whole. The sanitary quality of the bathing sea on the beaches is high (98.5 %), which makes the Croatian part of the Adriatic one of the cleanest sea areas in the Mediterranean and in Europe.

The most important environmental problems, and thus sustainable development problems of the Croatian part of the Adriatic are the following: lack of equipment for purification of urban and industrial waste water, accidental and operational marine pollution from maritime facilities, accidents in the transport of oil and oil products, the problem of introducing foreign marine micro-organisms and pathogens into the marine environment (ballast water), fishing and overfishing of fish stocks and, above all, excessive construction in the coastal area.

The total area of the Republic of Croatia is 87,661 km², of which 56,594 km² cover the land area and 31,067 km² cover the sea. Pursuant to the Decision on the Expansion of the Jurisdiction of the Republic of Croatia in the Adriatic Sea (Official Gazette 157/03, 77/04, 138/06 and 31/08), the Republic of Croatia exercises sovereign rights and jurisdiction in the Adriatic Sea beyond its national borders (territorial sea) through legal ZERP regime. In the area of ZERP (23 870 km²) the Republic of Croatia declared the contents of the exclusive economic zone relating to the sovereign rights of exploration and exploitation, conservation and management of living resources of the sea outside the outer boundary of territorial waters and jurisdiction over marine scientific research, protection and preservation of the marine environment.

During the audit in February 2021 the Decision declaring exclusive economic zone of the Republic of Croatia in the Adriatic Sea (Official Gazette 10/21) came into force, and the decision which established ZERP was revoked. According to the Decision, in the area of the Adriatic Sea in which the Republic of Croatia exercised its rights from 2003 to 2021 through the legal regime of the ZERP, the legal regime of the exclusive economic zone was established in accordance with the United Nations Convention on the Law of the Sea (UNCLOS).

The picture 1 shows the areas in the Adriatic Sea in which the Republic of Croatia is obliged to intervene in accordance with international conventions and national legislation. In the event of sudden marine pollution, the intervention plans shall apply to the sea areas, the seabed and submarine of the Republic of Croatia, which include the maritime domain, internal sea waters, the territorial sea and the ZERP.

Picture 1

Map of the area of application of intervention plans



Source: Intervention plan for sudden marine pollution

Economic activity in the Adriatic Sea is continuously increasing, which leads to an increase in maritime traffic. The consequence of increased traffic is an increased risk of pollution of the marine environment, such as pollution due to maritime accidents, discharges of polluted water, disposal of industrial waste and other pollution. Also, the risk for the marine environment during the exploration and exploitation of marine seabed and subsoil is also increased. Potential large-scale pollution in the Adriatic Sea can lead to a major economic and environmental disaster for the Republic of Croatia.

For the needs of the Ministry, the Risk Assessment Analysis of Marine Pollution from Marine Facilities and Offshore Activities in the Republic of Croatia (hereinafter: Risk Assessment Analysis) was prepared by the Adriatic Training and Research Centre for Response to Sudden Marine Pollution (hereinafter: ATRAC) in December 2017. This document identifies the relative risks of pollution by various types of oil in the entire maritime area of the Republic of Croatia. From the Risk Assessment Analysis, the probability of large-scale pollution of several thousand tons of spilled oil in the maritime area of the Republic of Croatia is extremely low. In the area of the ZERP, ie the area of separate navigation towards ports of the northern Adriatic, a moderate risk has been established in the event of a maritime accident which may result in large-scale pollution up to 500 m³ and even above the stated amount.

Therefore, the counties of Istria and Primorje-Gorski Kotar are areas of moderate risk of large-scale pollution. The probability of contamination of up to 5 m³ of spilled oil is estimated to be extremely high in the area of the internal sea waters of the Republic of Croatia.

For the needs of the Primorje-Gorski Kotar County, the risk assessment and sensitivity for the area of operation of the Contingency Plan for Sudden Marine Pollution in the Primorje-Gorski Kotar County (hereinafter: County Intervention Plan of PGC) was prepared by the Faculty of Maritime Studies in Rijeka in April 2011.

According to the document, areas of high probability of marine pollution in the Primorje-Gorski Kotar County include the areas of Liburnia (Opatija and the municipalities of Lovran and Mošćenička Draga) and the Gulf of Rijeka, the southern coast of Cres and the Lošinj archipelago with the exception of sheltered bays and coves. Areas of medium probability of pollution are the areas of the west coast of the island of Krk and the coast of Tramontana (island of Cres), and low levels of probability are the areas of the coastal edge of the Velebit Channel and Kvarnerić.

According to the provision of Article 6.1. of the Intervention Plan for Sudden Marine Pollution in the Split-Dalmatia County (hereinafter: County Intervention Plan of SDC), one of the basic tasks of REGIONAL CENTRE is the assessment of risk and sensitivity of the environment to which the county intervention plan of SDC is applied. Furthermore, the provision of Article 26 of the said Plan stipulates that the County Prefect of Split-Dalmatia County will, through the Maritime Administration, conduct an assessment of risk and environmental sensitivity in the area of application of the Plan within eight months from the date of adoption of the Plan. The stated assessment has not been made.

The State Audit Office recommends to the Split-Dalmatia County to make an assessment of the risk and sensitivity of the environment from marine pollution in accordance with the County Intervention Plan of SDC.

In 2018, the Ministry procured and uses a new computer application for predicting the movement of spilled oil OILMAP in order to effectively manage interventions in the event of sudden marine pollution. In addition to the Ministry, the application is also used by the National Headquarters of Rijeka. According to the Ministry's explanation, the OILMAP application enables fast predictions of the movement of spilled oil through a comprehensive 3D model that monitors various hydrocarbon components on the water surface, in the water column and in the air, and includes various algorithms for expansion, emulsification of hydrocarbons and more. It performs animated, graphical and tabular lists of mass balance results, and uses the Geographic Information System (hereinafter: GIS) for data mapping and analysis. Also, this tool allows graphical specification of pollution scenarios and entry of wind and hydrodynamics data.

Supervision of navigation in the Adriatic Sea and monitoring of the state of the marine environment

In the Republic of Croatia, the system of traffic monitoring is the responsibility of the Maritime Traffic Control and Management Service (Vessel Traffic System, hereinafter: VTS) which performs the activities of navigation organization and maritime traffic management. According to the provisions of Article 75a of the Maritime Code, monitoring and management of maritime transport is carried out in order to improve maritime safety, efficiency of maritime transport and protection of the marine environment.

Supervision and management of maritime traffic comprises the collection of data on maritime facilities and maritime traffic, the provision of data to maritime facilities, the provision of navigation advice and support in the navigation of maritime facilities, the organization of navigation and maritime traffic management and the supervision of navigation safety.

According to the Ordinance on the safety of maritime navigation in internal waters and territorial sea of the Republic of Croatia and the manner and conditions of performing supervision and management of maritime traffic (Official Gazette 79/13, 140/14 and 57/15), VTS Service is authorized to provide maritime traffic monitoring and management services and has the ability to interact with maritime facilities and react in changing navigational circumstances.

The task of the VTS Service is to establish a traffic-navigation flow in which all participants in maritime transport achieve the set goals while meeting the conditions of safety of navigation and environmental protection and compliance with regulations relating to navigation.

VTS services are information support, providing data important for the safe navigation of maritime facilities and may include services for the provision of navigation advice and support in the navigation of maritime facilities, as well as the organization of navigation and maritime traffic management.

VTS area is an area that includes inland waters, territorial sea and ZERP in which maritime traffic control and management activities are performed, and which consists of several VTS sectors.

VTS Service provides information support important for safe navigation of maritime facilities, which includes the service of providing data on other vessels in the VTS area, meteorological and hydrographic data, data on the reception of the ship in the port (berth/anchorage), data on pilotage, data on conditions on the waterway, data on the condition of navigation safety facilities, data on hazards that may pose a threat to vessels, other data that may have an impact on the safety of maritime traffic. It operates from three VTS centres located in Rijeka, Split and Dubrovnik, from which maritime traffic management is supervised and VTS services are provided.

In order to prevent the development of possible dangerous navigation situations and enable safe and efficient navigation, the VTS service may give binding instructions to one or more maritime facilities or all maritime facilities or prohibit the passage or prohibit navigation in a certain area to a vessel or group of vessels, prohibit overtaking or determining the area of overtaking, prohibiting departure from port or anchorage or entry into the VTS management sector, prohibiting entry into port or anchoring or leaving the management sector, separating maritime traffic temporally and / or spatially, allowing or limiting speed over bottom, determine a course or VTS voyage plan for ships carrying hazardous or polluting substances or towing or otherwise have limited manoeuvrability, prohibit anchoring and determine the anchorage area.

The VTS Service controls the traffic of ships by satellite and other equipment that enables the identification and active surveillance of ships, the use of long-range ship monitoring and identification systems (LRIT), and the port management information system. The VTS Service cooperates with the Port Authority, the Coast Guard, the Ministry of the Interior, ship owners, bodies managing ports, pilots and other maritime transport entities, and other bodies with the authority to provide safety services of public interest, such as Plovput doo, Hydrographic Institute of the Republic of Croatia and the Croatian Meteorological and Hydrological Service.

During the supervision and management of maritime navigation, the VTS Service provided 2 058 navigation safety services in 2017, a total of 3 892 services in 2018, and 8 608 services in 2019. According to the Ministry's explanation, the increase in services in the mentioned period was due to the application of a different methodology for recording and processing data on services provided.

The system for monitoring and management of maritime transport (Vessel Traffic Monitoring and Information System, hereinafter: VTMIS) is a technical system that consists of devices and equipment for the AIS system, radar devices and equipment, maritime radio communication devices and equipment, electronic navigational charts and control camera system, as well as Croatian integrated maritime information system (hereinafter: CIMIS system) for registration of arrivals and departures of ships in international and domestic service.

AIS system, used for the purpose of tracking ships, obliges cargo ships of 300 gross tonnage and more and passenger ships engaged in international voyages to have an AIS device by which they automatically and continuously transmit their data such as identification, data on navigation and the current movement and other necessary data.

In addition, ships entering and leaving the Adriatic Sea, transporting dangerous or polluting substances as cargo in bulk or packaged condition, are obliged to report to the coastal authorities, report positions at designated places and transmit formatted reports through the mandatory reporting system (ADRIREP System).

Among other things, the reports contain information on the ship's name, position, course and speed, port of origin and destination, and estimated time of arrival, total carrying capacity, gross tonnage, the total number of persons on board and other important information. During 2017 6 110 reports were submitted, in 2018 a total of 7 498 reports, and in 2019 a total of 7 603 reports.

VTS Service monitors, enters and processes ADRIREP reports that are entered into the CIMIS system module, through which data is exchanged with the central SafeSeaNet system, as well as with the countries of the Adriatic region. SafeSeaNet is the European Union's maritime information system for the electronic exchange of data in maritime transport in order to contribute to the prevention of maritime accidents and marine pollution, as well as the implementation of European legislation in the field of maritime safety. SafeSeaNet is also networked with a common communication and information system for emergencies within the European Union (CECIS) which serves to exchange alerts and notifications in case of emergency situations in real time. CECIS was established within the Emergency Response Coordination Centre (ERCC), which is the European Union's central civil protection mechanism.

Search and rescue operations for persons in distress at sea are provided by the Search and Rescue Service at Sea, and consists of: the National Centre, Harbour Master's Offices and Search and Rescue Units at Sea, and coastal observation units. According to the annual report for 2017, 2018 and 2019, the National Centre coordinated or indirectly participated in 1 735 search and rescue operations at sea in which 3 968 people were rescued. In the mentioned period, 45 ships, 491 boats and yachts and 70 other types of vessels were rescued. In 566 cases, transportation for medical assistance was organized or some other form of medical assistance was provided. The victims were mostly tourists, boaters and divers. In addition to the primary tasks of coordinating the search and rescue of people in distress at sea, the National Centre also monitors satellite images and checks the presence of fatty substances in water as part of the CleanSeaNet program, which is managed at European level by EMSA. According to the Ministry's explanation, the Republic of Croatia has been a full member of the CleanSeaNet program since May 2008, thus becoming a participant in the European system of satellite monitoring and detection of oil slicks at sea.

In the event of possible pollution, EMSA forwards satellite images to the National Centre, which, in cooperation with the Coast Guard, sub-centres and merchant ships, verifies that the pollution has actually occurred.

When the pollution is determined, its intensity and the need for cleaning and remediation is assessed, and the possible perpetrator of the pollution is determined. If responsibility is established, the perpetrator is reported to the inspection service that inspects the ship in the next port, and if the next port is not in the Republic of Croatia, an inspection is requested from the state in whose port the ship enters. European Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements, which entered into force in September 2005, regulates penalties and offenses for ship-source pollution and sets out EMSA's tasks with a view to providing support to Member States of the European Union in activities in the field of monitoring oil slicks at sea. That Directive requires EMSA to cooperate with Member States in developing technical solutions and providing technical support for the implementation of that Directive, which includes activities such as monitoring oil spills from ships via satellite systems. Accordingly, EMSA has developed the CleanSeaNet program, a monitoring system based on satellite tracking and monitoring of oil slicks in European waters. Furthermore, this system ensures the timely delivery of detailed information on observed oil slicks in the waters of the Member States and the provision of available satellite images and data on the position of potential oil slicks.

As part of this system, the Republic of Croatia carries out coordinated activities for the verification of satellite detections through direct monitoring and sampling of oil slicks. One of the objectives is to reduce the risk of pollution from offshore facilities and to assist Member States in the early detection of illegal oil spills into the sea using satellite surveillance.

Monitoring of the state of the marine environment in the area of inland waters, territorial sea and the area of the ZERP is performed, among other things, by regular patrols by sea-cleaning vessels as well as ships, aircraft and helicopters of the Coast Guard and Harbour Master's Offices, and since 2019, by drones owned by EMSA located at Brač Airport. According to the National Intervention Plan, the National Centre informs the operational bodies of other countries and the Regional Emergency Response Centre in case of the Mediterranean Sea pollution (hereinafter: REMPEC) about the resulting marine pollution through the Pollution Reporting System (hereinafter: POLREP). REMPEC was established on the basis of Resolution 7 adopted in Barcelona in 1976 at the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region on the Protection of the Mediterranean Sea, chaired by the IMO and UNEP. The aim of REMPEC is to contribute to the prevention and reduction of pollution from ships and to the management of emergency pollution by assisting the Mediterranean coastal states in implementing and ratifying international conventions related to the prevention, preparedness and response to marine pollution.

From 2017 to 2019, the National Centre notified the operational bodies of other countries and REMPEC in nine cases of the resulting marine pollution, of which seven reports related to possible pollution of the ZERP detected by the CleanSeaNet satellite monitoring program, and two were related to pollution in the port (Bay of Raša and Koromačno). Pollution in the area of ZERP was not repaired, because the oil film on the surface dispersed very quickly and no repair was required. The remediation was carried out in Bay of Raša, where there was more pollution, which is described in more detail later in the report. According to the Ministry's explanation, there was no need for remediation for the pollution in Koromačno, where a greasy stain was noticed on one beach, because the said greasy stain soon disappeared and it was not determined who the perpetrator was.

The tasks of navigation safety and supervision of maritime domain are performed by the administrative organization within the Ministry responsible for navigation safety and the Harbour Master's Office. The Harbour Master's Offices are regional units of the Ministry within the said administration and are directly responsible for performing the tasks of navigation safety and supervision of the maritime domain. The tasks of navigation safety are, among other things, searching for and rescuing persons in danger at sea, coordinating the rescue of vessels and persons from vessels on inland waters in the event of a navigation accident, anticipating, preventing, limiting, ensuring preparedness for reacting and responding to sudden marine pollution and to extraordinary natural events in the sea in order to protect the marine environment and the coastal area, as well as to protect the environment from pollution from inland navigation facilities, supervision and management of maritime traffic, inspection of navigation safety, inspection supervision of environmental protection from pollution from maritime facilities and inland navigation facilities, inspection supervision of transport in public coastal liner shipping, supervision over the maintenance of order, navigation safety and environmental protection conditions in ports and other parts of the internal sea waters and territorial sea of the Republic of Croatia and ports, harbours and other parts of inland waters, inspection work of collecting evidence and surveys of maritime and navigation violations that caused a maritime or navigation accident, keeping registers of maritime and inland navigation facilities, issuing documents and books to maritime and inland navigation facilities of the Croatian flag and other activities.

The Harbour Master's Offices keep records of ships of Croatian nationality, and in 2017 there were 1 434 ships under the Croatian flag, in 2018 1 422 ships, and in 2019 a total of 1 497 ships. A ship, other than a warship, is a vessel intended for navigation at sea, the length of the hull of which exceeds 15 m or is authorized to carry more than 12 passengers. A ship can be a passenger, cargo, technical vessel, fishing, public or scientific research ship.

According to the Ministry, inspections of ships in ports are regularly carried out to meet the technical standards prescribed by conventions and national regulations, and in 2017 1 200 inspections were carried out, in 2018 a total of 1 279 and in 2019 a total of 1 186 inspections. Of the stated number of inspections performed in 2017 and 2018, a total of 143 inspections of ships carrying oil, chemicals and other harmful substances were conducted, and in 2019 a total of 31 inspections of which 16 oil tankers, 12 chemical tankers and three gas tankers.

In 2017, fines were paid to the state budget according to misdemeanour orders and inspections of all port authorities at sea in the amount of HRK 2,150,219.00, in 2018 in the amount of HRK 2,136,476.00 and in 2019 in the amount of HRK 2,622,530.00.

As of July 2020, a total of eleven employees were employed in the National Centre, 27 in the VTS service, and 280 employees in the port authorities at sea.

The most important waterway in the Adriatic Sea for the transport of oil, petroleum products and other hazardous and harmful substances is the central waterway that passes through the Strait of Otranto and the entire central Adriatic to the largest ports in the northern Adriatic, as shown in Figure 2. The waterway is a belt of sea in which maritime traffic between ports takes place and represents the shortest and safest route in one navigation direction.

Figure 2

Waterways in the Adriatic Sea



Source: Risk assessment of marine pollution from maritime facilities and *offshore* activities in the Republic of Croatia

Supervision and management of maritime transport is carried out in order to increase the safety of navigation in the Adriatic Sea, which prevents the possibility of extraordinary and incidental events at sea. In addition, the Republic of Croatia, in cooperation with the Italian Republic and the Republic of Slovenia, has established a system of navigation routes and a system of directed and separate navigation in the Adriatic Sea in order to improve maritime traffic regulation and increase the level of safety of navigation. The system of directed and separate navigation in the Adriatic Sea is implemented in areas of intensive traffic and port approaches. This system was established on the basis of the Decree on the Publication of the Memorandum of Understanding between the Government of the Republic of Croatia and the Government of the Italian Republic on the establishment of a common navigation system and a system of directed and separate navigation in the Northern and Central Adriatic (Official Gazette – International treaties 5/01) and the Decree on the Publication of the Memorandum of Understanding between the Government of the Republic of Croatia, the Government of the Italian Republic and the Government of the Republic of Slovenia on the establishment of a common navigation system and a system of directed and separate navigation in the northern Adriatic (Official Gazette – International treaties 5/01).

The establishment of a system of navigation routes, directed and separate navigation and a system of monitoring navigation in the Adriatic Sea and monitoring the state of the marine environment increased safety in the Adriatic Sea and reduced the risk of ship collisions and possible accidents with sea pollution. Also, in order to prevent and limit accidental or intentional pollution of the sea, it is important that the relevant services have at all times information on ships in the Adriatic Sea, cargo they carry, number of people on board and other important information relevant in shipwrecks and extraordinary marine pollution.

The competent services of the Ministry have all the important information at their disposal, and the supervision and management of maritime traffic is carried out 24 hours a day, every day throughout the year. The Ministry keeps official records on maritime traffic and vessels, documents and data on maritime traffic in national and international navigation, which ships submit in the announcement of arrival or departure. Annexes 1 and 2 show the number of arrivals of ships docking in Croatian ports in national and international navigation, and the number of transported passengers and transhipped cargo related to hazardous and harmful substances, oil, petrol and petroleum products in Croatian ports for the period 2017 until 2019.

Financing the intervention management system

Entities participating in the implementation of intervention plans (Headquarters, National Centre and REGIONAL CENTRES) do not have their own financial resources, but funds provided in the state and county budgets for the implementation of National and county intervention plans. The National Intervention Plan is financed from the state budget in the positions of central state administration bodies responsible for the sea, environmental protection, nature protection and cultural heritage, as well as compensation for pollution costs per known pollutant.

The state budget finances: construction and maintenance of sea-cleaning vessels, part of the operating expenses of sea-cleaning vessels, costs of administrative and logistical support of the Headquarters, costs of training at national and international level, costs for joint responses to the Sub-regional Plan, mapping of sunken ships and aircraft owned by the Republic of Croatia, preparation of remediation projects and remediation in case of sudden marine pollution from sunken ships owned by the Republic of Croatia, costs of taking emergency measures when the polluter is unknown, risk and sensitivity assessment in the field of implementation development of program applications for the implementation of the National Intervention Plan and costs of the elimination of pollution from extraordinary natural events at sea.

Exceptionally, in the case of urgent action to eliminate the danger of marine pollution, and the polluter is known, the costs of carrying out urgent implementation of measures are covered from the state budget until collection from the polluter. The Ministry provides funds for the work of legal and natural persons in performing emergency interventions to prevent marine pollution and remediation of pollution consequences (towing, firefighting, installation of dams, use of tanks, other available equipment, etc.) and prepares a cost estimate for renting or using vessels and equipment. The cost estimate is located at Headquarters Command.

The central state administration body for nature protection (since July 2020 the Ministry of Economy and Sustainable Development and before the Ministry of Environmental Protection and Energy - MZOE) provides funds for emergency interventions to remove pollution and remediate the consequences of pollution in protected areas.

As funds should be provided in the State Budget for the costs of taking urgent measures when the polluter is unknown and when it is known until collection from the polluter, according to the National Intervention Plan, **the State Audit Office is of the opinion that the Ministry, in cooperation with the Ministry of Finance, Ministry of Environment and Energy and the Fund for Environmental Protection and Energy Efficiency, should establish an appropriate way to provide adequate sources of funding for the costs incurred in removing sudden marine pollution when the pollutant is unknown or to be collected from a known polluter and to procure / rent the necessary vessels and equipment to protect the sea from sudden pollution.**

– National and county intervention plans

The main source of funding for county intervention plans are county budgets. The county budget finances: administrative and logistical support costs of the REGIONAL CENTRE, training costs at the regional level, risk and sensitivity assessment in the area of implementation of the county intervention plan, including the production of sensitivity maps, costs of recording and mapping sunken boats, development of rehabilitation projects and remediation in case of sudden marine pollution, costs of cold drive and maintenance of sea-cleaning vessels, procurement of basic equipment and resources of REGIONAL CENTRE for implementation of county intervention plan, costs of implementation of response measures in case of emergency actions or in case of unknown polluter. According to the decision of the representative body of the county, a part of the costs for eliminating the danger of pollution and urgent implementation of measures in case of sudden marine pollution is financed from the budget of the coastal local government units.

Furthermore, the polluter bears the costs of polluting the marine environment. Costs from a known pollutant include: costs of protective measures taken to prevent any loss or damage caused by these measures, costs of pollution assessment, costs of sampling and analysis of sea and, where appropriate, air pollution, costs of reasonable measures actually taken or will be undertaken for the restoration or replacement of the previous state of the marine environment, compensation for costs that can be determined for damage caused to protected natural values and compensation for damage to the property of entities in the implementation of the National Intervention Plan.

A claim for compensation for damage to the marine environment caused by a vessel carrying oil and / or oil mixtures is filed against the ship owner under the Maritime Code, the International Convention on Civil Liability for Oil Pollution Damage and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage.

Funds at the national level for the implementation of the National Intervention Plan are planned by activities within the position of the state budget for the Ministry. From 2017 to 2019, the Ministry incurred expenditures for the purposes of implementing the said plan in the amount of HRK 3,911,780.00. In 2017, they were realized in the amount of HRK 433,236.00, for intellectual services in the amount of HRK 242,500.00 and services for extraction and removal of debris from the sea in the amount of HRK 190,736.00. In 2018, they were realized in the amount of HRK 951,669.00, namely for conducting a national demonstration exercise in the amount of HRK 578,371.00, procurement of a computer application for predicting the movement of spilled oil OILMAP in the amount of HRK 243,750.00, legal advice services in the amount of HRK of HRK 62,500.00, airport services for the unmanned aerial vehicle system in the amount of HRK 41,315.00, training services in the amount of HRK 20,000.00 and insurance services for temporarily they were realized in the amount of HRK 2,526,875.00, for co-financing the work of ten cleaning boats in the amount of HRK 2,300,000.00, procurement of meteorological and oceanographic forecasting services for the Adriatic Sea area in the amount of 151,875.00 HRK, fees for two licenses in the amount of HRK 55,000.00 and removal of a damaged motor yacht from the sea due to endangering safety and the possibility of sea pollution in the amount of HRK 20,000.00.

Primorje-Gorski Kotar County REGIONAL CENTRE has adopted work programs that contain the following activities: organization and implementation of exercise activities, updating the state of material-technical means owned by specialized companies and the number of people trained and available at any time for intervention in case of major marine pollution, production of leaflets with basic information on who to inform and how to proceed if pollution is noticed, organization and implementation of training for REGIONAL CENTRE members and entities engaged in the implementation of the County Intervention Plan of PGC. Furthermore, monitoring and control of the condition of all types of wrecks in the seabed of Primorje-Gorski Kotar County assessed as potentially dangerous for the environment, continuation of measures and initiatives for remediation of sunken ships which, due to their estimated amount of hydrocarbons in tanks, pose a great danger, actions of cleaning the sea, submarine and coast, air reconnaissance during the tourist season and updating and supplementing the display of risk assessment and sensitivity of the marine environment in the GIS. Expenditures for the implementation of the county intervention plan are planned in the positions of the county budget.

From 2017 to 2019, expenditures for the purposes of implementing the said plan were realized in the amount of HRK 6,452,411.00.

In the budget for 2017, expenditures in the amount of HRK 2,260,000.00 are planned, and they were realized in the amount of HRK 2,139,133.00. They were realized for the use of three cleaning boats in the amount of HRK 1,980,945.00, purchase and installation of equipment for a cleaning boat owned by the County in the amount of HRK 78,391.00, intellectual services in the amount of HRK 40,000.00, work of REGIONAL CENTRE in the amount of HRK 28,963.00 (organization of operational exercises, environmental clean-up actions, education and other services) and other expenditures in the amount of HRK 10,834.00. These expenditures were financed from county funds in the amount of HRK 1,449,133.00 and funds that the competent ministry at the time (Ministry of Environmental Protection and Energy) remitted to the County for the operating costs of three cleaning boats (HRK 230,000.00 for each boat) in the amount of 690.000,00 kn.

In the budget for 2018, expenditures in the amount of HRK 2,443,000.00 are planned, and they were realized in the amount of HRK 2,328,242.00. They were realized for the operation of three cleaning boats in the amount of HRK 1,917,760.00, overhaul services for a cleaning boat owned by the County in the amount of HRK 317,136.00, and the work of REGIONAL CENTRE in the amount of HRK 45,342.00 (organization of an operational exercise, environmental cleaning actions, education and other services), intellectual services in the amount of HRK 40,000.00 and other expenditures in the amount of HRK 8,004.00.

These expenditures were financed from county funds in the amount of HRK 1,638,242.00 and funds that the competent ministry at the time (Ministry of Environmental Protection and Energy) allocated to the County for the operation of three cleaning boats in the amount of HRK 690,000.00.

In the budget for 2019, expenditures in the amount of HRK 2,210,000.00 are planned, and they were realized in the amount of HRK 1,985,036.00. They were realized for the operation of three cleaning boats in the amount of HRK 1,850,508.00, the operation of REGIONAL CENTRE in the amount of HRK 92,544.00 (organization of operational exercises, environmental cleaning actions, education and other services), intellectual services in the amount of HRK 40,000.00 and other expenses in the amount of HRK 1,984.00. These expenditures were financed from county funds in the amount of HRK 1,295,036.00 and funds allocated by the new competent ministry - The Ministry of Sea, Transport and Infrastructure for the operation of three cleaning boats in the amount of HRK 690.000.00.

In addition to the above, the Primorje-Gorski Kotar County established an Emergency Pollution Rehabilitation Fund for the costs of implementing emergency response measures in case of emergency, when the polluter cannot provide them or the polluter is unknown.

According to the provision of Article 59 of the County Intervention Plan of PGC, it is determined that funds for the costs of implementing response measures to sudden pollution in case of urgent action, when the polluter cannot provide it or the polluter is unknown, are provided in the Primorje-Gorski Kotar County budget and budgets of coastal local government units in its area.

Furthermore, the provisions of Article 60 of the County Intervention Plan of PGC stipulate that the mentioned funds from the budget be paid into the Fund for the remediation of sudden pollution. The total assets of the Fund amount to HRK 600,000.00. The share of the Primorje-Gorski Kotar County in the Fund is 20.0% (HRK 120,000.00). Coastal local government units pay into the Fund 80.0% (HRK 480,000.00) of funds on the basis of the following elements: 50.0% of funds according to the length of the coastline, and 50.0% of funds according to the amount of budget funds (reduced by the amount intended for repayments of loans, borrowings and similar indebtedness). Also, according to the provision of Article 61 of the County Intervention Plan of PGC, the Fund's resources shall be paid to the budget of Primorje-Gorski Kotar County in a special position. According to the provisions of Article 62 of the County Intervention Plan of PGC, part of the funds not spent during the current year is transferred to the next year. Each year, the County and the coastal local government units pay into the budget of the County a part of the Fund's funds spent during the previous year no later than March 31 of the current year. According to the provision of Article 63 of the County Intervention Plan of PGC, the Fund's resources are at the disposal of and managed by the County Prefect, and they can be spent only at the written request of the REGIONAL CENTRE commander or his deputy. In the audited period, these funds were not spent. Primorje-Gorski Kotar County kept records of revenues generated from the management interventions in the event of sudden marine pollution.

Split-Dalmatia County REGIONAL CENTRE has adopted work programs that include the following activities: support and participation in sea and submarine cleaning activities, supervision of the county waters, activation of personnel, available equipment and resources from land, sea and air in case of pollution, procurement of pollution equipment, informing the Headquarters about the generated pollution, training and participation in exercises. Expenditures for the implementation of the county intervention plan are planned in the positions of the county budget. From 2017 to 2019, expenditures for the needs of the implementation of the said plan were realized in the amount of HRK 4,470,617.00.

In the budget for 2017, expenditures in the amount of HRK 2,176,291.00 are planned, and they were realized in the amount of HRK 1,855,725.00 (for the operation of two cleaning boats HRK 1,785,725.00 and intellectual services HRK 70,000.00).

These expenditures were financed from the funds of the Split-Dalmatia County in the amount of HRK 1,395,725.00 and funds that the competent ministry at the time (Ministry of Environmental Protection and Energy) allocated to the County for the operating costs of two cleaning boats (HRK 230,000.00 for each boat) in the amount of HRK 460,000.00.

According to the budget, expenditures in the amount of HRK 1,863,500.00 are planned for 2018, and they were realized in the amount of HRK 1,260,752.00 (for the operation of one cleaning boat HRK 1,006,252.00, services for removal, disposal and storage of illegally installed buoys and anchor devices according to the decisions of the Port Authority of Split HRK 167,000.00 and intellectual services HRK 87,500.00). These expenditures were financed from the funds of the Split-Dalmatia County in the amount of HRK 1,030,752.00 and funds allocated by the competent ministry at the time (Ministry of Environmental Protection and Energy) for the operating costs of one cleaning boat in the amount of HRK 230,000.00.

Expenditures in the amount of HRK 1,657,500.00 are planned for the budget for 2019, and they were realized in the amount of HRK 1,354,140.00 (for the operation of two cleaning boats HRK 1,266,640.00 and intellectual services HRK 87,500.00). These expenditures were financed from county funds in the amount of HRK 1,197,500.00 and funds from the Ministry of the Sea, Transport and Infrastructure for the operating costs of two ecological boats (for each boat with HRK 230,000.00) in the amount of HRK 460,000.00.

The County of Split and Dalmatia kept records of revenues and expenditures from the management of interventions in the event of sudden marine pollution.

Readiness of the intervention management system

The readiness of the intervention management system for sudden marine pollution is regulated by the National Intervention Plan and county intervention plans, and this audit covered the Primorje-Gorski Kotar and Split-Dalmatia counties.

– Headquarters

The Rules of Procedure of the Headquarters stipulate that the Headquarters meets at least once a year, and more often if necessary. Minutes shall be taken of each session. From 2017 to 2019, the headquarters held one regular annual session for which minutes were compiled. According to the National Intervention plan, the tasks of the Headquarters are: command action under the National Intervention Plan, the decision-making on activation and completion of coordination activities operations in the National Plan or on activation and termination of coordination activities of the National Centre, implementation of measures for the prevention of marine pollution, activation of the personnel, available equipment and resources from land, sea and air, activation of available technical and human resources of the Coast Guard, coordination of activities of competent central state administration bodies and legal entities and services in activities related to prevention and reduction of damage at sea and requesting information from other central state administration bodies, institutions and legal and natural persons if necessary, issuing orders for sampling and analysis of marine pollution during and after the intervention, collecting evidence and documents for the purpose of claiming damages after the intervention, making a decision on how to remove pollution, making a decision on the use of dispersants, making a decision on the manner and place for the disposal of collected waste, seeking help from other countries or seeking assistance from REMPEC through the National Headquarters, ie activating the Sub-regional Plan.

Furthermore, the coordination of joint response operations under the Sub-regional plan, when the Republic of Croatia requests assistance from other countries and REMPEC, assigning tasks and monitoring work of the National Centre and regional centres, adoption of the annual report on marine pollution and undertaken activities, exchange of information and cooperation with representatives of National Centre, regional centres and authorities of other countries within the implementation of the Sub-regional plan, adoption of a financial plan proposal for the implementation of the National Intervention Plan and Sub-regional plan, preparation of an assessment of resources required in case of emergency interventions based on the assessment of the regional centre, adoption of the Rules of Procedure about work and informing the public. In the period covered by the audit from 2017 to 2019, the Headquarters did not make decisions on activation and completion of activities under the National Intervention Plan or on activation and completion of coordination activities of the National Centre because there was no large-scale marine pollution required by the National Intervention Plan.

– Primorje-Gorski Kotar County Regional Centre

The Rules of Procedure of the Regional Centre for the implementation of the Primorje-Gorski Kotar County Intervention Plan stipulate that the session of the Regional Centre be held at least twice a year. Minutes shall be taken of each session. From 2017 to 2019, Regional Centre held three regular annual sessions for which minutes were compiled.

The Primorje-Gorski Kotar County Intervention Plan states that the Regional Centre performs the following tasks: implements the plan, implement measures for prevention of marine pollution, estimate the scale and intensity of marine pollution, informs the Headquarters of the pollution that occurred and the measures taken for prevention and response, activates people, available equipment and means from land, sea and air, gives orders to authorized laboratories for sampling and analysis of marine pollution during and after the intervention, makes decisions on how to remove marine pollution, make decisions on the use of dispersants, with the opinion of the Headquarters, monitors the contaminated area, makes decisions on the manner and place of disposal of collected waste, keeps a log of the course of action, collects evidence and documents for the preparation of the final report and prepares the final calculation of costs, informs the public about the pollution and measures taken, prepares estimates of funds for emergency interventions, prepares and submits semi-annual report on monitoring the status and interventions taken and submits it to the Secretariat of the Headquarters, prepares and submits an annual report to the Headquarters, prepares and submits an annual work program to the Assembly of Primorje-Gorski Kotar County and the Secretariat of the Headquarters, prepares the draft financial plan for the implementation of the plan, makes estimates of risk and vulnerability of the plan and proposed amendments, updates the annexes of the plan and operates according to the County Intervention Plan. Also, according to the Plan, coordinating actions are taken by the National Centre in cooperation with the Regional Centre if the pollution endangers or may endanger the marine environment, human health or commercial use of the sea in the area of two or more regional centres (Istria County, Lika-Senj County, Primorje-Gorski Kotar County, Zadar County) or exceeds the possibility of operation of one of the mentioned regional centres. In the period covered by the audit, from 2017 to 2019, the Regional Centre has not made decisions on activation and termination of action by the intervention plan although there was a smaller marine pollution whose rehabilitation was organized by Harbour Master's Office Rijeka without activating the intervention plan.

– Split-Dalmatia County Regional Centre

The Intervention Plan of the Split-Dalmatia County determines that the Regional Centre performs the following tasks: makes assessments of (required) funds for urgent intervention, prepares and submits to the Headquarters the semi-annual report on monitoring the sea state and completed activities, the risk assessment and the sensitivity of the environment, conducts training and exercises, makes the financial plan proposal, proposes changes and additions to the plan, continuously updates of all important information in the appendices of the plan, draws up the annual work program and annual report for the mayor of Split-Dalmatia county, informs the public through media, operational activities according to the plan, in case of activation of the National Intervention Plan, by the order of the Headquarters, operational activities according to the National Intervention Plan, initial assessment of the situation, implements measures for preventing marine pollution, assesses the extent of the volume of marine pollution, informs the Headquarters on sudden marine pollution and undertaken activities, organizes the intervention according to the agreed intervention strategy, activates personnel, available land, sea and air equipment and means, makes decisions on how to remove pollution, decisions on use of dispersants with the consent of Headquarters, monitors the pollution the contaminated area.

Furthermore, makes a decision on the manner and place of disposal of collected waste, informs the public through the media, keeps a diary of the course of action, collects evidence and documents for the final report and makes the final calculation of intervention costs.

The intervention plan determines that the Split-Dalmatia County Regional Centre takes over the operational activities in the area of Šibenik-Knin, Split-Dalmatia and Dubrovnik-Neretva County, in cooperation with regional centres of neighbouring counties, in addition to coordinating activities of the National Centre, in case the pollution can endanger the marine environment, human health and economic use of the sea and can have consequences for one or more of the mentioned counties and when the amount of pollution exceeds the possibility of individual action of each mentioned regional centre.

From 2017 to 2019, the Split-Dalmatia County Regional Centre has not made decisions on activation and termination of action by the intervention plan although there was a smaller marine pollution whose cleaning was organized by the Harbour Master Split without activating the intervention plan.

- Administrative affairs of the Headquarters and regional centres

The administrative tasks of the Headquarters are performed by the Secretariat with its seat in the central state administration body responsible for the sea, and the operational activities of the Headquarters are performed by the National Centre in Rijeka.

According to the provisions of Article 2.1. of the National Intervention Plan, the Secretary of the Headquarters is a representative of the central state administration body responsible for the sea, and the administrative affairs of the Headquarters are performed by the secretariat based in the central state administration body responsible for the sea. The Ministry did not appoint a Secretary of the Headquarters.

The administrative work of the Primorje-Gorski Kotar County Regional Centre, in accordance with the provision of their intervention plan, done by Department of Maritime Affairs, Transport and Communications of Primorje-Gorski Kotar County, and a secretary was appointed by the mayor.

The administrative tasks of the Split-Dalmatia County Regional Centre are performed by the Administrative Department for Maritime Affairs and Tourism of the Split-Dalmatia County. The Split-Dalmatia County Regional Centre has no secretary.

In order to perform administrative tasks, the State Audit Office recommends that the Ministry appoint the Secretary of the Headquarters and that the Split-Dalmatia County appoint the Secretary of the Regional Centre.

- Rules of Procedure

Work of the Headquarters and the Primorje-Gorski Kotar County Regional Centre is determined by the Rules of Procedure, while the Split-Dalmatia County Regional Centre has not adopted its Rules of Procedure. The Rules of Procedure of Headquarters and of Primorje-Gorski Kotar County Regional Centre arrange the way of work, holding of meetings, decision-making, rights and duties of members and other issues of organization and work.

The Rules of Procedure of the Headquarters stipulate that the session should be held at least once a year, and the Rules of Procedure of the Primorje-Gorski Kotar County at least twice a year. The National Intervention Plan, as one of the tasks of the Headquarters, stipulates the obligation to adopt rules of procedure for its work. Also, the Intervention Plan of Primorje-Gorski Kotar County prescribes the adoption of rules of procedure, while the Intervention Plan of Split-Dalmatia County does not prescribe it.

The National Intervention Plan does not stipulate an obligation for regional centres to adopt rules of procedure. Although no rules of procedure have been adopted, the Split-Dalmatia County Regional Centre held one session in 2017, two in 2018 and one regular session in 2019, for which minutes were drawn up.

The State Audit Office recommends to the Split-Dalmatia County, in their Intervention Plan, to determine the adoption of the rules of procedure of the Regional Centre and request the Split-Dalmatia County Regional Centre to adopt it.

- Members of the Headquarters and regional centres

According to the provision of Article 2.1. of the National Intervention Plan, members and deputy members of the Headquarters are appointed by the Government of the Republic of Croatia from the central state administration bodies responsible for: sea, environmental protection, nature protection, internal affairs, water management, foreign affairs, finance, protection and rescue, defence and representatives of the National Centre.

According to the provision of Article 2.3. of the National Intervention Plan, members and deputy members of the regional centres are appointed by the mayor from the ranks of county administration bodies competent for marine protection, protection of an environment, protection and rescue, and the internal affairs, representatives of port authorities and from scientific and professional institutions.

The National Intervention Plan does not specify the number of members and deputy members of the Headquarters and regional centres from the mentioned areas. Also, their tasks and responsibilities are not defined.

The Headquarters has a commander and a deputy commander and nine members and nine deputy members. One member and deputy member is from the Ministry, then from the Ministry of Interior, Ministry of Foreign and European Affairs, Ministry of Agriculture, Ministry of Finance, Ministry of Defence, and two members and deputy members from the Ministry of Environment and Energy and the Ministry of the Interior.

The Primorje-Gorski Kotar County Regional Centre has a commander and deputy commander, eight members and six deputy members and a secretary. Two members and one deputy member are from the Primorje-Gorski Kotar County. Two members and two deputy members are from the Ministry of Environment and Energy. One member and one deputy member are from Croatian waters, the Public Institution "Nature" and the Ministry of the Interior, and one member is from the Ministry.

Split-Dalmatia County Regional Centre has a commander and deputy commander, 13 members and 15 deputy members.

Two members and two deputy members are from the Split-Dalmatia County, one member and two deputy members from the Ministry of the Interior and one member from the Ministry.

One member and one deputy member are from the State Inspectorate, the Port of Split Administration, the Sveti Florijan Fire Brigade, company Ciana and oil company INA, the Hydrographic Institute, the Teaching Institute for Public Health of the Split-Dalmatia County, the Institute of Oceanography and Fisheries, Public fire brigades of the City of Split and the Port Authority of the Split-Dalmatia County.

The State Audit Office is of the opinion that the Ministry should determine the required number of members and deputy members of the Headquarters and county operational centres of the identified areas and their specific tasks and responsibilities in the National Intervention Plan.

- Provision of technical means and staff for the implementation of measures to prevent and limit marine pollution

According to the provisions of Article 2.4. of the National Intervention Plan, other participants in the implementation of the intervention plan participate professionally and are technically qualified legal entities and natural persons, craftsmen in order to eliminate the consequences of sudden marine pollution registered under special regulations and who have a permit for hazardous waste management and consent to monitor the marine environment.

The list of these legal entities and natural persons, craftsmen and their equipment and assets is in the Headquarters Command and is published on the website of the central state administration body responsible for the sea. For the removal of pollution on the coast caused by sea pollution, by order of the Headquarters and the regional centres, civil protection is included, and if necessary, volunteers can be included.

According to the provisions of Article 3.1. of the National Intervention Plan, in the event of sudden marine pollution, for the implementation of forecasting procedures and the implementation of measures for the prevention and limitation of marine pollution vessels, equipment and personnel shall be provided to respond to emergencies, marine pollution and fires at sea (legal entities and natural persons, craftsmen, State Administration for Protection and Rescue - Fire Service), reception facilities on the coast for ship waste (port authorities), reception devices for waste collection from the sea and the coast (regional centers in cooperation with competent county authorities and legal entities and natural persons, craftsmen) and staff for cleaning of coastal pollution (legal entities and natural persons, craftsmen, State Administration for Protection and Rescue - Civil Protection Service and, if necessary, volunteers).

Furthermore, it is stated that county intervention plans must contain a list of total equipment and assets with identified locations and quantities of equipment and assets owned by counties and owned by legal entities and natural persons who participate or may participate in the intervention at the invitation of regional centres or Headquarters. Also, according to the provision of Article 7 of the National Intervention Plan, the central state administration body responsible for the sea provides funds for the work of legal entities and craftsmen in performing emergency interventions to prevent marine pollution and remediation of pollution consequences (towing, firefighting, dam construction, tank use, other available equipment and other) and prepares a cost estimate for the rental or use of vessels and equipment.

The cost estimate is located at Headquarters Command. According to the provisions 12 and 13 of the Intervention Plan of the Primorje-Gorski Kotar County, professionally and technically qualified legal entities and craftsmen participate in the implementation of the above, to eliminate the consequences of sudden marine pollution, registered according to special regulations and licensed for hazardous waste management and consent to monitor the state of the marine environment. Regional centres may request expert support advice from other institutions, organizations, and legal entities and experts from the list located in the command and secretariat of the regional centre.

For the removal of marine pollution and pollution on the coast caused by marine pollution, the Civil Protection of the Primorje-Gorski Kotar County is included, and if necessary, volunteers can be involved.

According to the provisions of Article 5.6. of the Intervention Plan of Split-Dalmatia County, in case of sudden marine pollution in the Split-Dalmatia County, professionally and technically qualified legal entities and craftsmen registered and authorized, according to the National Intervention Plan, to implement intervention measures or eliminate the consequences of sudden sea pollution and the coast, may participate in the implementation of the said plan. If necessary, the commander of the regional centre may decide to include members of the civil protection of local government and volunteers in the implementation of intervention measures. The list of legal entities and craftsmen, and their equipment and assets, which is in the Headquarters, is published on the website of the central state administration body responsible for the sea and contains a list of 31 legal entities and their equipment. Intervention Plan of Primorje-Gorski Kotar County and for Split-Dalmatia County contain lists of legal persons without outstanding service prices.

There are 37 legal entities on the list of the Primorje-Gorski Kotar County regional centre, of which only seven are on the list of the Headquarters. There are 14 legal entities on the list of the Split-Dalmatia County regional centre, which are also on the list of the Headquarters. The lists (of legal entities and craftsmen and their equipment and assets) of the Headquarters and regional centres are not harmonized. Upon inspection of the submitted documentation, it was determined that the lists of regional centres were updated, while the list of authorized persons published on the Ministry's website was not harmonized with the lists of regional centres, ie it was not updated.

There are no contractual relations with the legal entities listed in the mentioned lists and it is not possible to determine whether the listed equipment is in technically correct condition, whether all listed equipment is available in case of sudden sea pollution, whether it is physically easily accessible so that it can be put into use quickly in case of sudden pollution and whether there are enough professionally trained and trained staff to put the equipment into operation.

For Split-Dalmatia County there is a list of specialized equipment for response to sudden marine pollution in the county and the analysis of existing specialized equipment for response to sudden pollution, made with the aim of raising the level of readiness and efficiency of participants involved into the county system for responding to incidents resulting from marine pollution.

The Split-Dalmatia County has prepared an analysis of the equipment of six specialized economic entities that own or have specialized equipment for removing pollution from the sea and equipment owned by a company majority owned by the Republic of Croatia located in marinas in the County, although the company is not specialized to respond to sudden marine pollution. Also it is determined that the various equipment that is not only use for cleaning is located mainly in utility companies founded by individual local government units.

As the list of legal entities and natural persons, craftsmen and their equipment and means for eliminating the consequences of sudden marine pollution on the Ministry's website has not been updated, the **State Audit Office recommends that the Ministry regularly update the list of legal entities and craftsmen registered and authorized to intervene (removal of the consequences caused by sudden pollution of the sea and the coast) and their equipment and assets with lists of county operational centres.**

In November 2016, Analysis of existing technical resources and availability of services to respond to sudden marine pollution was made for the Ministry. The aim of this analysis is to draft proposals for tender documentation and ensure the availability of material and technical resources and services to improve preparedness and readiness to respond to sudden pollution of the marine environment and to determine the procedures for hiring professionally and technically qualified legal entities and craftsmen that deal with the cleaning of the marine environment, ie the elimination of the consequences that have arisen in cases of sudden marine pollution. Also, the goal is to enable the availability of services and equipment for the needs of responding to sudden marine pollution for the needs of the Headquarters and regional centres.

The existing specialized equipment and specialized vessels located in the territory of the Republic of Croatia and the neighbouring coastal states of the Adriatic Sea were analysed. Based on the above, a list of appropriate equipment and means with technical specifications (floating protective dams, skimmers, pumps and tanks for receiving oily waste) is given, which the Headquarters and regional centres should have at their disposal, given the existing risks. The necessary characteristics are not given for specialized vessels because the intervention vessels are the capital investments which requires and a very detailed and specific approach. Furthermore, it was determined that in the internal sea waters, due to the indentation of the Croatian coast, there is less pollution with non-persistent (non-permanent) oils and the above should be responded to urgently.

It was further determined that large-scale pollution with persistent oils is possible in the area of the territorial sea or economic zone, ie on the waterways of tankers to ports from the northern Adriatic. It was found that on the eastern side of the Adriatic (mostly in the Croatian part of the Adriatic Sea) there is not enough appropriate specialized equipment to respond to sudden pollution of the sea with oils and other hazardous and harmful substances, for large-scale pollution.

It was found that most of the equipment is owned by private companies, mostly in Rijeka, Split, Zadar and Šibenik and that the water area of the City of Dubrovnik requires more intense preparedness measures.

According to the 2017 Risk Assessment Analysis, which was also prepared for the needs of the Ministry, it was determined that the existing system of preparedness and response to sudden marine pollution in the Republic of Croatia cannot respond to large-scale pollution and the high seas. Also, it was determined that the costs of response and removal of the consequences of high pollution (more than ten thousand tons of spilled oil) would range from 15,000,000 EUR to 20,000,000 EUR, and the damage to the economy would be many times higher.

Furthermore, it was found that the existing specialized companies and organizations have specialized equipment that can be used only for minor pollution (up to 10 m³), and the only exception is the area of the Rijeka Bay where there is equipment that can respond to slightly larger pollution, but existing available equipment is not adequate for the high seas area. According to the provision of Article 2.1. of the National Intervention Plan, command action is carried out by the Headquarters if pollution by dangerous and harmful substances or extraordinary natural events in the sea can endanger the marine environment, human health and economic use of the sea and can have consequences for two or more counties or when the amount of oil pollution and / or an oil mixture greater than 2,000 m³.

According to the provision of Article 2.3. of the said intervention plan, regional centre acts if the pollution endangers or may endanger the marine environment, human health or the economic use of the sea in the area of operation of the regional centre and if the amount of oil and / or oil mixture pollution is up to 2,000 m³ and if the scope and intensity of the extraordinary natural event is the responsibility of the regional centre. In accordance with the above provisions, all coastal counties should purchase equipment and ships that could be used for large-scale marine pollution (up to 2000 m³) and on the high seas. Significant budget funds should be allocated for the procurement of these equipment and ships and their maintenance. According to the Risk Assessment Analysis, in the area under the jurisdiction of the regional centres, the highest risk was identified for minor marine pollution, while the risk of large-scale marine pollution is very low or moderate.

For minor marine pollution, coastal counties have satisfactory equipment and ships or have concluded contracts with companies that have equipment and ships at their disposal, and such pollution is remedied.

Given that these counties would have to allocate significant budget funds to be able to intervene independently in large-scale marine pollution, **the State Audit Office is of the opinion that the equipment and ships necessary to intervene in large-scale pollution should to be provided at the state level and used for the entire Croatian part of the Adriatic Sea. Furthermore, the Ministry should develop an intervention management system in cooperation with the Ministry of Defence using existing resources to make the system as efficient as possible and equipment and ships better utilized.**

State Audit Office recommends that the Ministry by the National Intervention Plan should determine the lower range (less than 2,000 m³) of oil spilled into the sea for the operations of county centres in accordance with needs and possibilities.

The national and county intervention plans do not specify the basic maintenance and the manner of maintenance, servicing and testing and storage of the necessary equipment (to be easily accessible) and the maintenance of county-owned cleaning boats.

The Directorate for Navigation Safety of the competent Ministry prepared a report for 2019 on the condition of ten cleaning boats (five owned by counties and five owned by other legal entities). The work of these boats in 2019 is co-financed by the Ministry.

For each boat, the condition of the hull, deck and structure, main propulsion and other machinery and cleaning equipment was described, and an estimate of the cost of the annual overhaul was made. Nine boats were found to be in perfect working order, while one was found to have serious deficiencies for safe navigation related to the main engines and GPS (satellite radio navigation system for determining position on Earth). It was determined that the boats were maintained and that they should perform regular annual maintenance in 2019. It was also proposed that the legal entity that owns the boat sends to the Ministry a report on regular annual maintenance of boats (specification of works) and reports on works at the plant and extraordinary works.

The Split-Dalmatia County Regional Centre owns the equipment (12 dams with auxiliary equipment) for interventions in case of sudden sea pollution, and it was procured through the HAZADR project within the IPA Adriatic cross-border cooperation program. It was given for use to a company from Kaštel Gomilica that deals with environmental protection of the sea, based on a contract concluded in November 2018. The main goal of the HAZADR project is to establish a cross-border network for risk prevention and crisis management to reduce the risk of pollution of the Adriatic Sea. Furthermore, the goal is to strengthen the capacity for joint action of communities belonging to the Adriatic region against environmental and technological disasters in the event of ship collisions, shipwrecks and spills of oil and harmful substances into the sea.

The equipment is leased for five years free of charge and may not be used for commercial purposes. The company is required to store and maintain equipment, and is used to clean the Adriatic Sea and river estuaries of the oil spill, a mixture of oil, harmful and dangerous substances in accordance with the National Intervention Plan or Intervention Plan of Split-Dalmatia County and in the case of accidental pollution of the marine environment outside the territory of the Republic Croatia in accordance with international agreements to which the Republic of Croatia is a signatory.

In April 2019, the Government of the Republic of Croatia adopted a Decision on co-financing the maintenance of the network of sea-cleaning vessels for action in the event of sudden marine pollution.

Based on the aforementioned decision and concluded contracts on the handover of sea cleaners to coastal counties free of charge, the Ministry participated in the costs of maintaining the cleaner boats in order to ensure readiness for one with the mentioned counties.

Regarding the maintenance of cleaning boats and equipment, the National Intervention Plan regulates only their financing in such a way that the state budget finances the maintenance of sea cleaning ships and the costs of the basic maintenance of sea cleaning ships, and from the county budget the costs of basic maintenance and maintenance of basic equipment. Also, by the Intervention Plan of Primorje-Gorski Kotar County and Split-Dalmatia County, according to the National Intervention Plan, the part of the operating expenses and costs of servicing of cleaning boats and basic equipment are provided from the county budget. These plans do not stipulate that in accordance with the provisions of Article 85 of the Maritime Code, the condition of the ship and its equipment must be maintained by the company or owner so that the ship remains capable of sailing without danger to the ship, persons on board, cargo and the environment. In contracts for cleaning vessels it is concluded that the cleaning boats and associated equipment must be maintained in working order, but it is not specified in the National Intervention Plan or the county intervention plans. The manner in which the required equipment should be maintained (serviced), tested and stored is not specified.

The State Audit Office is of the opinion that the Ministry and Primorje-Gorski Kotar and the Split-Dalmatia counties should determine in the intervention plans that the condition of the cleaning boats and its equipment is maintained by the company or owner so that the boat remains capable of sailing without danger to the ship, persons on board, cargo and the environment and determine the manner of maintenance, testing and storage of the necessary equipment that must be available in case of sudden marine pollution.

According to the Analysis of the existing resources, it was determined that on the Croatian side of the Adriatic there is not enough appropriate specialized equipment to respond to sudden marine pollution with oils and other hazardous and harmful substances for major pollution. It was also stated that in the event of sudden large-scale pollution, a specialized company for responding to large incidents will not be able to provide assistance in the area of the internal sea waters of the Republic of Croatia in time.

According to the National Intervention Plan, one of the tasks of the Headquarters is the possibility of activating the available technical and human resources of the Coast Guard. In case of pollution in the Protected ecological-fishing zone of the Republic of Croatia, and if necessary in the territorial and internal sea waters, the National Centre may propose to the Headquarters the activation of the Coast Guard.

During 2019 and 2020, the Ministry temporarily had equipment (two containers of equipment) for combating marine pollution with large-scale in accordance with the July 2019 Agreement on the temporary transfer of European Maritime Safety Agency's assets to the Republic of Croatia. Based on the agreement between the Ministry and the Ministry of Defence from July 2019, the said equipment in the total value of 890,295 EUR was stored in the military port of Lora, Split from June 2019 to October 2020 when it was returned to the Logistics Centre for Marine Pollution Control (Equipment Assistance Services), which is located in Ravenna (Republic of Italy).

With this equipment, which is owned by European Maritime Safety Agency, the Coast Guard conducted exercises in the open sea during 2019 and 2020. Once the equipment is returned, the Coast Guard does not have equipment that would be sufficient in the event of sudden large scale marine pollution for use in the open seas. Activating the Coast Guard in a situation of large scale sudden marine pollution in the area of the Protected ecological-fishing zone, territorial sea or inland waters is effective if the Coast Guard has sufficient equipment to prevent and limit the spread of marine pollution.

According to the provisions of Article 5, paragraph 1. of the Coast Guard Act of the Republic of Croatia (Official Gazette 125/19), the activities of the Coast Guard are, inter alia, prevention, limiting, preparedness and intervention in the event of sudden marine pollution, in accordance with special regulations.

The Coast Guard has adequate storage facilities for storing equipment, trained people who successfully conducted exercises during 2019 and 2020, a ship adapted for the use and the installation of dams in the sea, and ships for monitoring the sea. Given the above, it is necessary to determine sufficient equipment (dams, skimmers, etc.) that would be used by the Coast Guard for rapid interventions in the event of sudden large-scale marine pollution on the high seas. Also, the availability of equipment would enable the Coast Guard to continuously conduct exercises, which would ensure the readiness and training of the ship's crew. In order for the system of protection and preservation of the sea to be as successful as possible, rapid and effective intervention is needed in the event of sudden marine pollution, which, among other things, means pre-equipped, trained and educated people.

State Audit Office is of the opinion that equipping the Coast Guard would increase the efficiency of the intervention management system and ensure the readiness of the Republic of Croatia to prevent and limit the spread of large-scale marine pollution in the Protected ecological-fishing zone, the territorial sea and inland waters.

The State Audit Office recommends that the Ministry, in cooperation with the Ministry of Defence, determine the necessary equipment for the activities of the Coast Guard in preventing and limiting marine pollution in the Protected ecological-fishing zone, and if necessary in the territorial sea and inland waters.

For the removal of pollution on the coast resulting from marine pollution by order of the Headquarters or regional centres, the Civil Protection Service and Fire Brigade Office may be included, among others, and if necessary, volunteers. Of the 21 units of regional self-government in the Republic of Croatia, seven counties: Istria, Primorje-Gorski Kotar, Lika-Senj, Zadar, Šibenik-Knin, Split-Dalmatia and Dubrovnik-Neretva have access to the sea and belong to Adriatic Croatia. According to the data provided by the Ministry, the number of members, commissioners and deputy commissioners and civil protection coordinators belonging to Adriatic Croatia is 9,971, the number of members of public fire brigades is 1,369 and members of the voluntary fire brigade 6,665, while the number of employees in activities of civil protection in the state bodies, regional or local is 207.

The total number of members of the Civil Defence and the Department for the fire brigades, which could be involved in the case of accidental pollution of the sea and the coast of small and large scale in the area of Adriatic Croatia is 18 212, and at the level of the Republic of Croatia is 68 029. Annex 3 shows the total number of members of the Civil Protection and the Fire Service in the territory of the Republic of Croatia by counties.

- Cleaning boats

According to the provisions of Article 7 of the National Intervention Plan, from state budget, among other things, the construction and maintenance of cleaning boats were financed and some of the expenditures regarding the maintenance of the cleaning boats. In accordance with the aforementioned provision of the National Intervention Plan, at the end of December 2020, there were ten cleaning boats in Croatia. Out of this number, five boats are owned by coastal counties, and five are owned by legal entities, with which coastal counties have concluded contracts for cleaning services. In June 2007, the Government of the Republic of Croatia passed a decision on the transfer of five ECO 13 sea-cleaning boats to the counties property, one each for Primorje-Gorski Kotar, Split-Dalmatia, Zadar, Šibenik-Knin and Dubrovnik-Neretva counties.

These five boats became the property of the mentioned counties. The other five cleaning boats (two in Primorje-Gorski Kotar and one each in Split-Dalmatia, Dubrovnik - Neretva and Istria counties) are owned by legal entities. Coastal counties have concluded contracts with boat owners for cleaning services. For all cleaning boats owned by counties and legal entities, the competent ministry co-finances annually a part of the operating expenses in the amount of 230,000.00 HRK, or a total of 22,300,000.00 HRK per year. Until 2019, the Ministry of Environmental Protection, Physical Planning and Construction was responsible for co-financing of those boats and control of the funds spent, and since 2019 the liability is taken over by the Ministry of Sea, Transport and Infrastructure.

In Table 2 there is an overview of the cleaning boats, by counties.

Table 2

Sea cleaning boats deployed by counties at the end of 2019

Name of the county	Type of boat	Number of boats	Port	County property (YES / NO)
Istria	ECO 200	1	Pula	NO
Primorje-Gorski Kotar	ECO 13/4	1	Rijeka	YES
	ECO 200	2	Rijeka	NO
Lika-Senj and Zadar	ECO 13/3	1	Zadar	YES
Šibenik-Knin	ECO 13/2	1	Šibenik	YES
Split-Dalmatia	ECO 13/5	1	Kaštel Gomilica	YES
	ECO C1	1	Solin	NO
Dubrovnik-Neretva	ECO 13/1	1	Ploče	YES
	ECO C2	1	Dubrovnik	NO
Total	-	10	-	

The ships ECO 13/1 and ECO 13/2 are 13.25 m long and 25 knots in speed, with tanks for collecting liquid pollution with a volume of 4.5 m³.

The ships ECO 13/3, ECO 13/4 and ECO 13/5 are 13.10 m long and 25 knots in speed, with tanks for collecting liquid pollution with a volume of 4.8 m³.

The three ECO 200 ships are 14.7 m long and 8 knots in speed, with tanks for collecting liquid pollution with a volume of 10 m³.

The ships ECO C1 and ECO C2 are 9.5 m long, 2 knots in speed, with tanks for collecting liquid pollution with a volume of 5 m³.

The Directorate for Navigation Safety prepared a report on the condition of all these ships for 2019 and it was determined that nine ships are in good condition, while one was found to have serious shortcomings for safe navigation related to the main engines and GPS.

For the Primorje-Gorski Kotar County, the competent ministry co-finances the operation of three cleaning boats (ECO 13/4 owned by the County and two ECO 200 owned by another legal entity). Articles 15, 21 and 57 of the Intervention Plan of the Primorje-Gorski Kotar County defines that monitoring the marine environment is carried out, among other things, by the planned areas of regular rotations of sea cleaning boats. Furthermore, according to the circumstances, cleaning boats shall be put on standby in order to reduce and eliminate the risk of marine pollution in accordance with the business-technical cooperation contract. It was also determined that part of the operating expenses and maintenance costs of sea-cleaning boats are financed from the County budget.

Based on the aforementioned Decision of the Government of the Republic of Croatia from June 2007, in July 2007 the Ministry of Environmental Protection, Physical Planning and Construction and the Primorje-Gorski Kotar County concluded an Agreement on the transfer of the sea cleaner boat ECO 13/4 to the County free of charge. The Ministry committed to provide funds for the settlement of the expenses of maintenance in the amount of 230.000,00 HRK per year. The county committed to select and contract a cleaning contractor on the basis of a public tender and to bear part of the costs of maintenance or use in the part that was not provided by the Ministry. Public procurement was conducted in December 2007 and was contracted until 2026. The contract with the company from Rijeka on performing works on cleaning the marine environment in the waters of the Primorje-Gorski Kotar County during the use of the boat ECO 13/14 was signed and the appendix in May 2011. Appendix was signed because in the basic contract the price of the service was not stated with value added tax.

Furthermore, in April 2015, the Primorje-Gorski Kotar County concluded an Agreement with the same Ministry on co-financing part of operating expenses of two boats for cleaning the marine environment (ECO 200) in the waters of the Primorje-Gorski Kotar County. The obligation to cover the operating expenses of the competent ministry for each boat in the amount of 230,000.00 HRK and the obligation of the County to finance other costs has been agreed. This Agreement is concluded for the period of four years. Prior to its conclusion, in June 2014, the County conducted a public procurement procedure and concluded a framework agreement with a company from Rijeka regarding the procurement of marine cleaning services with two boats for a period of five years and five annual contracts. After the expiration of the mentioned contracts, another contract was concluded with the mentioned company in May 2019 for a period of three months for sea cleaning services. A new framework agreement for the mentioned services with the same company was concluded in August 2019, based on the conducted public procurement procedure, for a period of five years. One annual contract was concluded on the basis of the new framework agreement.

With the mentioned contracts, the competent ministry undertook to co-finance a part of the operating expenses, for each boat 230,000.00 HRK per year, and the County undertook to co-finance the other part of operating expenses for which the competent ministry did not provide funds.

Operating expenses are fuel and lubricant costs, boat insurance, crew salaries and boat service costs. In accordance with the concluded contracts, the contractor of sea cleaning services put the boats on standby and performed with them the tasks of regular touring and supervision of the waters and ecological intervention at sea. The county submitted to the competent ministry annual reports on the work of the three cleaning boats and the intended use of funds. The County's expenditures for these cleaning boats from 2017 to 2019 amounted to 5,749,213.00 HRK.

For the area of Split-Dalmatia County, the competent ministry co-finances the work of two cleaning boats (one owned by the Split-Dalmatia County - ECO 13/5 and the other owned by a legal entity - ECO C1). Article 12 and 15 of the Intervention Plan of Split-Dalmatia County, determined that, in order to reduce and eliminate the risk of marine pollution, the Commander of the regional centre should issue an order to put the cleaning boats on standby. The planned costs of the plan are also considered to be the costs of the part of operating expenses of sea-cleaning vessels intended for intervention in the area of the Split-Dalmatia County, regardless of their ownership.

Pursuant to the aforementioned Decision of the Government of the Republic of Croatia from June 2007, in July 2007 the Split-Dalmatia County and the Ministry of Environmental Protection, Physical Planning and Construction concluded an agreement on the transfer of the ECO 13/5 to the Split-Dalmatia County into ownership free of charge. The competent ministry provides funds to cover part of the operating expenses in the amount of 230,000.00 HRK per year, and the Split-Dalmatia County selected and contracted the contractor in case of sudden marine pollution and bear part of the operating expenses or use not provided by the ministry.

In October 2007, the county government decided to hand over the boat for use to the voluntary fire brigade from Kaštel Gomilica free of charge, for a period of ten years. In October 2008, the said fire company established a company. Based on the decision of the county government, a new contract on cleaning the sea was concluded in May 2009 with the said company, for a period of ten years. As stated in the speech, the sea cleaner ECO 13/5 was handed over to the company for use, free of charge. In December 2019, the Split-Dalmatia County concluded with the competent ministry an annex to the 2007 Agreement on the handover of the said sea-cleaning boat. The provision determining the method of selection from the contractor has been amended. Article 4 of the Annex to the Agreement stipulates that the Split-Dalmatia County is obliged to select and contract a contractor to perform activities in the event of sudden marine pollution according to the agreed conditions in accordance with the regulations of the Republic of Croatia.

The mentioned County did not select an executor to perform preparedness and response to sudden marine pollution by carrying out one of the prescribed procurement procedures in the Public Procurement Act (Official Gazette 120/16), but in January 2020 concluded a new contract with another fire brigade handing over the cleaning boat for use free of charge for the period from 1 January to 30 June 2020. Since November 2016, the said association has been a co-owner of a company that previously performed sea cleaning operations from 2009 to 2019.

The State Audit Office recommends that the Split-Dalmatia County select an executor to perform preparedness and response to sudden marine pollution in accordance with the provision of Article 4 of Annex of the Contract concluded on December 2019 with the competent ministry.

The Split-Dalmatia County conducted an open public procurement procedure for marine environment cleaning services with one ecological ship (ECO C1) and in February 2019 concluded a framework agreement with a selected bidder, a company from Split, for a period of two years. Based on the said agreement, annual contracts were concluded. By the mentioned contracts, the competent ministry undertook to co-finance a part of the operating expenses, in the amount of 230,000.00 HRK per year, and the County undertook to co-finance the other part of the operating expenses. The operating expenses are the costs of fuel and lubricants, boat insurance, crew salaries and boat service costs.

In December 2019, the Split-Dalmatia County concluded an agreement with the Ministry on co-financing part of the costs of one ECO C1 cleaning boat for operation in the event of sudden sea pollution (which is not owned by the county). The Ministry is obliged to pay the costs of basic maintenance boat cleaners in the amount of 230,000.00 HRK, and obligations of Split-Dalmatia County is funding the remaining costs. This contract is concluded for a period of two years. The contractor of sea cleaning services, in accordance with the concluded contracts (for ECO 13/5 and ECO C1), put the boats on standby and performed the tasks of regular visits and monitoring of the waters and ecological intervention at sea. The Split-Dalmatia County submitted to the competent ministry annual reports on the work of these cleaning boats and the intended use of funds. From 2017 to 2019, the expenditures of the Split-Dalmatia County for the operation of these cleaning boats (ECO 13/5 and ECO C1) are in total 4,058,617.00 HRK.

For the remediation of marine pollution, for certain coastal areas of the European Union and for the Adriatic Sea area, EMSA has established a network of cleaning ships. This represents additional assistance to the Member States of the European Union, in the case of large-scale oil spills.

During 2019, after the public procurement procedure, EMSA concluded a contract with a company from Croatia, about the services of vessels in readiness to remove spilled oil for the Adriatic Sea area. In the supplement to the Official Journal of the European Union (Tenders Electronic Daily) in December 2019, a contract award notice was published for vessels in case of pollution, with a total value of 3,364,549 EUR. The above-mentioned contract was concluded for the period from 12 August 2020 to 11 May 2024. According to the contract, the vessel will be used for cases of large-scale marine pollution. The mentioned vessel is daily involved in economic activities in the Adriatic Sea. After receiving a request for assistance, the vessel has the opportunity to be rebuilt and in the short term available for large-scale oil spill remediation activities. According to the Ministry, the said vessel (ship Kijac) has a total carrying capacity of 3,537.3 mt and will be on standby in the Adriatic Sea from August 2020 to May 2024.

This ship is equipped with specialized equipment for the control of large-scale marine pollution, namely dams, skimmers, a system for dispersing dispersants and a detection system for oil pollution. The ship's crew is trained to handle the installed equipment.

In July 2020, the Ministry conducted an open public procurement procedure for the implementation of measures to intervene in the protection of the sea against pollution and the procurement of equipment and means for interventions in the event of sudden marine pollution. The estimated value of the procurement is 48,000,000.00 HRK excluding value added tax for eleven groups of equipment, including boat rental, which determines the criteria for the selection of economic entities, their technical and professional ability and the criteria for evaluating bids. Based on the open procedure, a framework agreement will be concluded with several economic operators for a period of four years.

Until the time of the audit (March 2021), this procedure is still ongoing. The mentioned equipment and vessels will also be used for large-scale pollution, which is within the competence of the Headquarters and would be used at the level of the Republic of Croatia.

The State Audit Office recommends to the Ministry to procure and / or rent equipment and vessels that will be available in case of sudden pollution of the sea on a smaller and larger scale.

- Conducting demonstration exercises and courses

The training of persons participating in the implementation of the National Intervention Plan and County Intervention Plans is carried out in courses and demonstration exercises at the national, regional and international levels. In accordance with the provisions of Article 6, point 103. the National Intervention Plan aims at courses and exercises: improvement of cooperation and coordination of operational staff, particularly emergency teams, check the command structure of contingency plans, achieving a satisfactory level of communication especially among the teams that participate in measures of joint action, inspection of equipment and gaining experience in handling equipment, products and other means in measures of action, gaining experience through joint work at the international level, training of command staff, members of the Headquarters and regional centres on the decision-making and command process and others general issues and analysis of actions in cases of activation of the National Intervention Plan and county intervention plans with an emphasis on the actions of individual entities.

The demonstration exercise consists of: checking the communication system, the exercise of checking the readiness to carry out sea and coastal cleaning activities, and forwarding information to the media and analysing the conducted demonstration exercise.

The communication system verification exercise is conducted once a year at the national and county level. The demonstration exercise is conducted by the Headquarters once in three years, and by the regional centres once a year. In the year when the national demonstration exercise is conducted, no regional centre exercises are conducted.

In the audited period, trainings were conducted at the national level organized by an authorized legal entity (ATRAC). The 2017 topic of education was the introduction in dealing with marine pollution – strategy, assessment and initial intervention, and in 2018 the topic of education was the management for accidental marine pollution. Members of the Headquarters and commanders of regional centres participated in both trainings. In 2018 and 2019, coordination of regional centres of coastal counties was held, in which members of regional centres and representatives of the Ministry participated. The Analysis of Existing Resources found that in the Republic of Croatia there is no company or institution accredited by the competent authority in charge of preparedness and response to sudden pollution in the marine environment, which prepares and maintains training according to the IMO OPRC model.

ATRAC is an institution that conducts trainings based on the IMO OPRC globally accepted model, but the training program is not accredited. The 1990 International Convention on Oil Pollution Preparedness, Action and Cooperation (OPRC) called on the IMO, together with relevant international and regional organizations, the oil and shipping industry, to develop a comprehensive education program on oil pollution preparedness and response, including ensuring the availability of expert advice for the development and implementation of training programs. IMO has developed three models of training courses (for operational staff, supervisors and field commanders, and senior management staff). Such trainings form the basis of any good system of preparedness and response and should be conducted once a year at the national and regional level (preparation and organization of spill response exercises).

Also, in the mentioned analysis, the need for advisory services in case of danger of sudden pollution has been identified, which means providing technical advice to local, regional and national competent authorities. The recommended competencies of such advisors are listed.

The State Audit Office is of the opinion that the Ministry, according to the identified needs for advisory services in the Analysis of existing technical resources and availability of response services to sudden marine pollution, should organize all trainings according to IMO OPRC globally accepted model for response to sudden marine pollution and find authorized consultants (determine the list of advisors with the necessary competencies) who can be called in if necessary in the event of sudden pollution and be involved in the pollution remediation process.

In the audited period, demonstration exercises were held at the national level. In October 2017, organized by the Ministry, a national demonstration exercise "Adriatic 2017 – Protection of the Adriatic Sea from ship pollution" was conducted in the Kaštela Bay. In May 2018, the national demonstration exercise "ADRIATIC 2018" was conducted in the Split area within the international project "Full Scale Civil Protection Exercise – ADRIATIC 2018". In November 2019, the Ministry organized a national demonstration exercise to combat marine pollution and extinguish fires of the vessel "NAMIRG Pula 2019" in the Pula waters within the EU project "North Adriatic Maritime Incident Response Group – NAMIRG". These demonstrations included the verification system of communication, exercise test readiness for conducting clean sea and shore, and informing the media and the analysis conducted demonstration.

The County Intervention Plan of Primorje-Gorski Kotar County determines the training of persons participating in the implementation of their intervention plan and the content and holding of demonstration exercises. In 2017, representatives of the Primorje-Gorski Kotar County Regional Centre participated in two trainings, a working meeting related to the protection of the sea and coast from pollution and panels organized as part of the national demonstration exercise "Adriatic 2017 – Protection of the Adriatic Sea from ship pollution". Furthermore, the Regional Centre of Primorje-Gorski Kotar County in 2017 organized the demonstration "MIGRANTS RI 2017" – demonstration exercise and the use of assets for sea protection. In the same year, representatives of the Primorje-Gorski Kotar County Regional Centre were present at the national demonstration exercise "Adriatic 2017 – Protection of the Adriatic Sea from ship pollution".

In 2018, representatives of the Primorje-Gorski Kotar County Regional Centre participated in three trainings, namely: the first coordination of all regional centres, in order to recognize the diversity of existing county response systems, exchange experiences of different regional centres and define uniform standards of preparedness and reactions, at a working meeting related to the protection of the sea and the coast from pollution and at panels organized within the national demonstration exercise "ADRIATIC 2018".

Furthermore, in 2018, the Primorje-Gorski Kotar County Regional Centre conducted a demonstration exercise of the work of some cleaning boats and the use of sea protection equipment it owns, and representatives of the Primorje-Gorski Kotar County Regional Centre were present at the national demonstration exercise "ADRIATIC 2018".

In 2019, representatives of the Primorje-Gorski Kotar County Regional Centre participated in three trainings, namely: the second coordination of all regional centres, a working meeting related to the protection of the sea and coast from pollution and panels organized as part of the national demonstration exercise "NAMIRG Pula 2019".

Furthermore, in 2019, the Primorje-Gorski Kotar County Regional Centre conducted a demonstration exercise on the operation of part of the cleaning boats and the use of marine protection products that it owns and participated in the exercise "Technical-technological accident 2019" – Field exercise operational power from the system of civil protection the Primorje-Gorski Kotar County in which on the boat cleaner property was active. This year, the representatives of regional centres were also present at the national demonstration exercise "NAMIRG Pula 2019".

These demonstrations included the verification of the communication system, the exercise of testing preparedness for implementation of taking part clean sea and shore, and informing the media and the analysis conducted demonstration.

Article 14 of the Intervention Plan of Split-Dalmatia County states that the training programs and exercises shall be carried out at all levels of responsibility and competence.

The training will be conducted at three levels of management, namely: cleaning techniques and the use of specialized equipment, operational management of intervention and planning of intervention activities, and intervention management and strategic planning.

According to the above, a regular training program will be conducted through professional courses, according to the following schedule: training for the first level (cleaning techniques and use of specialized equipment) at least once every two years, training for the second level (operational intervention management and intervention planning) at least once a year and for the third level (intervention management and strategic planning) at least once every two years. Also, it has been determined that the demonstration exercise of the Split-Dalmatia County Regional Centre will be conducted once a year with prior notice to the Commander of the Headquarters. Demonstration exercise is not conducted in the year when the demonstration exercise is conducted according to the national intervention plan conducted by the Headquarters.

In 2017 representatives of the Regional Centre of Split-Dalmatia County participated in two trainings, namely: the international conference "The waste in the sea – Challenges and Solutions" and on panels organized in the framework of the national demonstration "Adriatic 2017 – Protection of the Adriatic Sea from pollution ships". In 2017, courses were organized for the Port Authority in Split, an oil refining company and voluntary fire brigades within the demonstration exercise "Firefighting, evacuation and rescue, environmental rehabilitation in case of fire on a tanker during unloading of oil products in the tanker port Ina - Solin". Also, in June 2017, organized by the State Rescue Administration, the Ministry of Defence of the Republic of Croatia and the Croatian Fire Brigade, fire preparations, courses and training were conducted as part of the exercise "Divulje 2017".

Furthermore, in 2017, a demonstration exercise "Firefighting, evacuation and rescue, environmental remediation in case of fire on a tanker during the unloading of petroleum products in the tanker port INA - SOLIN" and a demonstration exercise "Divulje 2017" was held. In the same year, the company that operates a cleaning boat owned by the Split-Dalmatia County together with the Coast Guard of the Republic of Croatia conducted an exercise to prevent pollution of protective floating dams in case of major marine pollution, and the Split-Dalmatia County Regional Centre participated in the national demonstration exercise Adriatic 2017 – Protection of the Adriatic Sea from ship pollution".

In 2018, representatives of the Regional Centre of the Split-Dalmatia County participated in the first coordination of all regional centres, and all members of the regional centres in panels organized as part of the national demonstration exercise "ADRIATIC 2018".

Training of personnel involved in the activities of cleaning was conducted according to the standard scc / scp (standard security) and a course for management staff that manages the actions taken to mitigate marine pollution (IMO Oil Pollution, Preparedness, Response, and Co-Operation (OPRC) Level 1 - First Responder and Level 2 - Supervision / on - Scene Commander). In the same year, the Split-Dalmatia County Regional Centre participated in the national demonstration exercise "ADRIATIC 2018".

In 2019, representatives of the Split-Dalmatia County Regional Centre participated in two trainings, namely: the second coordination of all regional centres and panels organized within the national demonstration exercise "NAMIRG Pula 2019". Furthermore, in 2019, they were present at the national demonstration exercise "NAMIRG Pula 2019". In the same year, an exercise in firefighting, rescuing the injured and flood defence was organized as part of the European Union project ProteCHt2save on the topic of preventing damage to cultural property and facilities caused by sea flooding, torrential waters and fire.

These demonstrations included checking the communication system, exercises to check preparedness to carry out sea and coastal clean-up operations, as well as forwarding information to the media and analysing the conducted demonstration exercise.

Regional cooperation

In addition to the Republic of Croatia, the countries with access to the Adriatic Sea are: the Republic of Albania, Bosnia and Herzegovina, the Italian Republic, Montenegro and the Republic of Slovenia. Any major pollution in the territorial sea of one of the coastal states can affect the entire Adriatic ecosystem.

Due to the above, regional cooperation of all coastal states in the Adriatic Sea is needed, especially in the area of monitoring the situation and in the case of sudden marine pollution. In October 2008, the Republic of Croatia adopted the Act on Ratification of the Agreement on the sub-regional level. The agreement includes cooperation in the event of sudden pollution in the Adriatic Sea between the Republic of Croatia, the Italian Republic and the Republic of Slovenia. The plan was drawn up as part of a project to develop a sub-regional system for preventing and combating large-scale sudden marine pollution that affects or could affect the sea, coasts and other related interests of Croatia, Italy and Slovenia in the Adriatic Sea.

It was compiled with the technical assistance of REMPEC (Regional Centre for Emergency Interventions in the Event of Sudden Pollution in the Mediterranean) within the Mediterranean Action Plan. The Agreement was not ratified by the Italian Republic and therefore the Agreement has not entered into force.

According to the Ministry, the Agreement aims to establish a mechanism of mutual cooperation through which the competent national authorities of Adriatic states will cooperate in order to coordinate and consolidate their actions related to the prevention and response to sudden marine pollution that affects or could affect the territorial sea, coasts and the related interests of one or more Adriatic States or to accidents that exceed the available response capacity of each State individually.

Furthermore, it explains that the international legal framework for regional cooperation in the field of protection of the Mediterranean Sea was established through the United Nations Environment Program (UNEP) by establishing the Mediterranean Action Plan. Activities under this program are aimed at protecting the environment, promoting sustainable management models, as well as strengthening cooperation among Mediterranean countries.

In terms of sudden marine pollution, the Ministry participates in the work of The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) which helps Mediterranean countries in building national prevention capacity and capacity to respond to large-scale marine pollution and promote cooperation in dealing with sudden marine pollution by hydrocarbons and other hazardous and noxious substances.

In addition, Croatia has been participating in the Joint Commission for the Protection of the Adriatic Sea and coastal areas to multidisciplinary solving environmental problems in the Adriatic Sea, whose members are Italian Republic and the Republic of Slovenia and Montenegro. Also, the Republic of Croatia cooperates with the Adriatic countries through the European Union Strategy for the Adriatic-Ionian Region.

Split-Dalmatia County participates in the European Union project PEPSEA – Protecting the Enclosed Parts of the Sea in the Adriatic from Pollution, which is co-financed under the Cross-border Cooperation Program INTERREG V-A Italy – Croatia 2014 – 2020. Project implementation began on 1 January 2019 and will last until June 30, 2021. The leading partner is the Agency for Development of the Zadar County of Zadar Nova, and the partners on the Croatian side are Split-Dalmatia County, Šibenik-Knin County and ATRAC and on the Italian side Consorzio Futuro in Ricerca, Agenzia Regionale per la Potenziamento dell'Ambiente del Friuli Venezia Giulia, Ente Parco Regionale Veneto del Delta Po and Camera di Commercio di Bari. The aim of the project is to develop an appropriate system of final solutions for pollution events in ports and bays that will increase the level of protection of the sea and coast from sea pollution from ships, platforms and land sources, which will affect the conservation of biodiversity and lifestyles. The partners will work on the creation of a Register of closed parts of the sea that are subject to pollution hazards and on the development and application of a methodology for the development of detailed intervention plans with the development of technology for effective cleaning of marine pollution in closed parts of the sea. The total value of the project is 2,900,570 EUR, and grants for the implementation of activities in the Split-Dalmatia County amount to 513,218 EUR. The project is ongoing.

PROCEDURES OF COMPETENT AUTHORITIES IN CASES OF INTERVENTIONS TO SUDDEN MARINE POLLUTION

According to the National Intervention Plan, if there is a risk of pollution from a maritime facility, the person responsible for that facility is obliged to notify the National Centre. Also, if a responsible person causes or notices marine pollution or accidents that may cause pollution, shall immediately notify the county 112 centre, harbour master's office or its branches. An official who has received a notification of marine pollution or an accident that may cause marine pollution is obliged to forward the information to the National Centre.

An official in the National Centre, upon notification of marine pollution or accident likely to cause marine pollution, is obliged by the responsible person in the maritime facility to request information on the type of accident, the type, size and name, the number of persons on the premises, the owner / user facility, agent of the facility in the Republic of Croatia, exact position, degree of danger to human life, data on injured and the possibility of helping the injured, type of cargo and tanks and information on their danger to the marine environment, the extent of damage to the facility and actions taken to eliminate threats and possible consequences.

After collecting and processing data on marine pollution or accidents that may cause marine pollution, the National Centre submits an accident report to the central state administration bodies responsible for the sea, environmental protection and internal affairs, the competent regional centres, the county centre 112 and the Coast Guard. Upon receipt of the accident report, in order to determine the extent and type of pollution and assess the situation, the commander of the regional centre ensures reconnaissance and monitoring of the movement of pollution on the sea surface by plane or helicopter. Based on the accident report and the assessment of the situation, an intervention plan of the appropriate level (national or county plans) is activated and the competent authorities are notified.

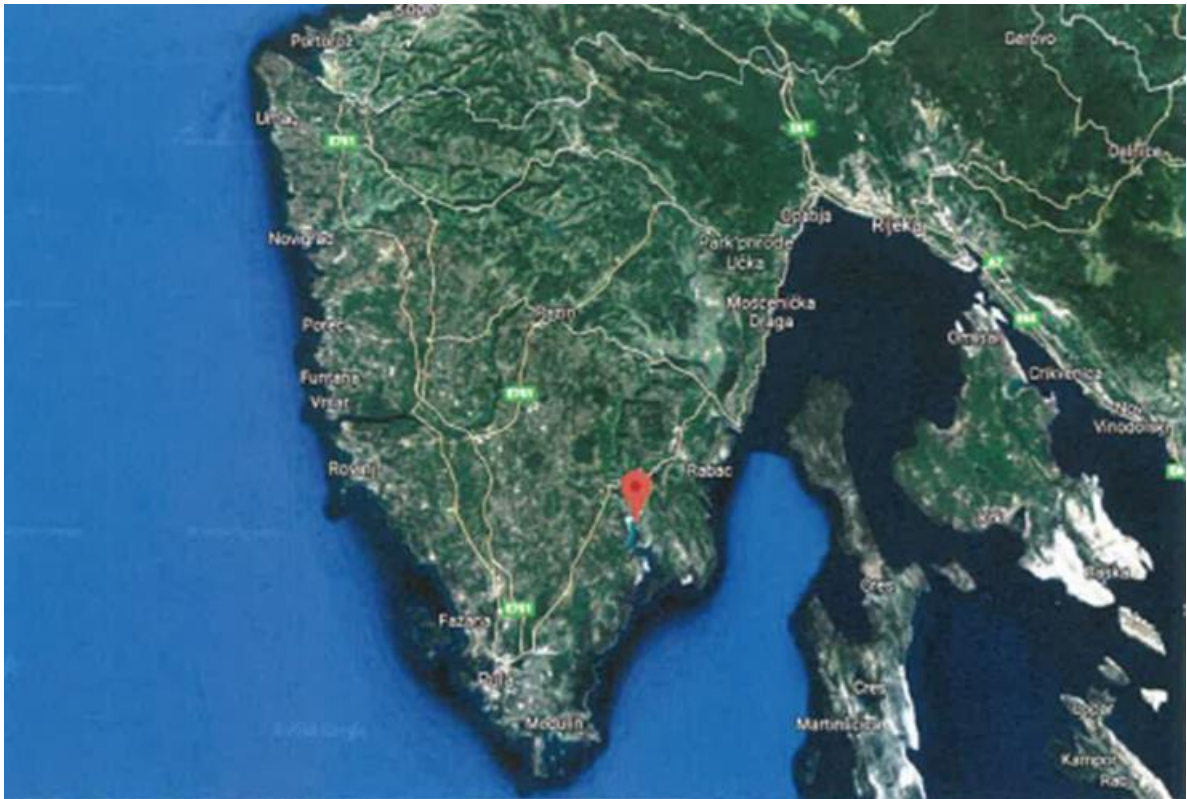
During the period from 2017 to the end of 2019, the National Intervention Plan at the state level was not activated, as there was no major marine pollution (2,000 m³ or more) in the Protected ecological-fishing belt area, territorial sea and inland waters.

From 2017 to the end of 2019, the largest pollution in the Croatian maritime area occurred in June 2018 in the Bay of Raša, near Plomin, which is under the jurisdiction of the County Operations Centre of the Istria County. According to the course diary compiled by the Istrian County Centre, the County Centre 112 received a report of sea pollution in the Bay of Raša, which was reported to the Commander of the Port Authority, which is also the commander of the Istrian County. After an insight into the type and extent of pollution, the need for urgent response and implementation of urgent measures to deal with marine pollution was identified. The Commander of the Istrian County Centre has made a decision to activate the Intervention Plan for Sudden Marine Pollution in the Istria County. About all of the above, the competent Ministry and the National Centre were informed. The Commander of the regional centre of the Istria County issued an order for the remediation of the polluted area to a specialized company from Rijeka, which has cleaning boats and equipment for remediation in case of sea pollution.

Figure 3 shows a map with a mark (red sign) showing the location of sea pollution in the Bay of Raša (Istrian Peninsula).

Figure 3

Map with the indication of the place of sea pollution in the area of Bay Raša (Istrian peninsula)



Source: Action log

The inspection of the Port Authority of Pula established that during the loading of fuel on the cargo ship (Fidelity) sailing under the flag of the Republic of Lebanon in the Bay of Raša, fuel spilled into the sea. According to the operation log, approximately 8 m³ of fuel was found to have leaked.

In addition to the sea surface, motor fuel pollution affected a large part of the coast and berths (a total of 137 small and 56 large boats). On the same day when the pollution was observed (June 2018), the remediation of the contaminated area began with the method of mechanical collection of contaminated contents using a vacuum tank and skimmer (pump) and absorbent dams were installed. Solid oily waste and polluted seagrass that had been dumped ashore by the sea and absorbed some of the spilled fuel were also collected. In addition to the coast and the sea surface, all vessels affected by the pollution were cleaned. Also, a remediation order was issued to a specialized company from Šibenik, which owns a multifunctional vessel and machinery for the remediation of inaccessible bays. Employees of the said specialized company photographed and made a map of the polluted inaccessible coast in the length of approximately 5.3 km. In addition to specialized companies for cleaning the pollution area, the Public Fire Brigade from Labin and the Voluntary Fire Brigade from Raša were engaged. The public fire brigade with its vessel also set up absorbent dams and participated in the cleaning of boats and the shore. The local population of the municipalities of Barban and Marcana, organized by the Voluntary Fire Brigade of Marcana, was also involved in the cleaning action. The shipowner hired an expert from the International Tanker Owners Pollution Federation to provide advisory services to the Istrian County Regional Centre.

Figure 4 shows photographs taken immediately after the pollution of the Bay of Raša with motor fuel.

Figure 4

Photographs of sea and coastal pollution in the Bay of Raša



Source: Action log

For the needs of the Istrian County Regional Centre, divers from the Centre for Underwater Activities from Pula undertook diving activities in the Bay of Raša in order to determine the degree of seabed pollution. According to the diving report, it was noticed that there was no pollution with spilled fuel on the seabed.

During the cleaning action in July 2018, professors from the Faculty of Mining, Geology and Petroleum Engineering in Zagreb were hired and they confirmed the surface contamination of the soil and assessed the method of cleaning by installing absorbent dams and cleaning the shore with pressurized water as effective.

Meetings of the Regional Centre of the Istrian County were organized every day during the action of cleaning the Bay of Raša in June and July 2018. In addition to members of the Regional Centre of the Istrian County, other representatives of public authorities and institutions of the Republic of Croatia and heads of local units participated. At these meetings, the action of cleaning was coordinated and statements of all the stakeholders who participated in the cleaning were submitted. All important issues for pollution remediation were also discussed. According to the logbook, the problem of depth of soil cleaning from polluted beaches was pointed out, because after the removal of the surface layer, traces of spilled fuel were noticed at a depth of 30 cm, emphasizing the need to hire external experts. Also, during the cleaning action, the problem of lack of impermeable waste containers was noticed.

According to the latest diary report from July 2018, no decision was made to end the cleaning operation and further activities of the Istrian County Regional Centre because, as stated, the announcement of the completion of the action can only be made based on the findings and opinions of experts.

Also, it stated that pollution continues to occur, which was first noticed on the gravelly parts of the coast where there was a deeper penetration of spilled fuel into the ground and because of the tides, waves and other natural phenomena, fuel reappears to the surface.

The above example of pollution in the Bay of Raša shows the importance of including a large number of people of different professions during the pollution remediation process. According to the action diary, there was a lack of experts who would provide accurate information to the Istrian County Regional Centre on professional issues. For example, advice on how deep the soil needs to be cleaned. Also, the need for a larger amount of equipment such as impermeable waste containers has been identified. In addition to specialized companies, the involvement of public fire brigades and voluntary fire brigades proved to be extremely important in the event of sudden marine pollution, as they have people at their disposal to help set up impermeable dams, clean boats and the shore. According to the Ministry, the case of pollution in the Bay of Raša was presented and discussed at expert meetings.

Because of the sea pollution in the Bay of Raša, Istria County and the Ministry concluded the agreement with the owner of the cargo ship (Fidelity) and their insurance company, regarding the costs incurred in August 2018, on the method and amount of payment of part of the costs of remediation of pollution of the marine environment in the Bay of Raša amounting to 1,500,000 USD. After negotiations with the representative of the owner and insurer in September 2019, the County of Istria and the Ministry reached an out-of-court settlement to cover the total costs of marine pollution and signed a Disclaimer and Final Settlement Agreement in the total amount of 3,325,000 USD. The said settlement amount includes 1,500,000 USD previously paid and 1,625,000 USD for the final settlement of all creditors involved in the remediation of marine and coastal pollution. A one-time payment of USD 200,000 to the business account of the County of Istria is envisaged for the implementation of future measures to eliminate the consequences of pollution and restore the previous state (restoration, protection and implementation of monitoring). According to the Ministry's explanation, the Port Authority of Pula, in agreement with the Municipal State Attorney's Office in Pazin, did not initiate misdemeanour proceedings against those responsible for environmental pollution in the Bay of Raša for possible criminal proceedings.

At the time of the audit (November 2020), the Istria County Regional Centre has not yet concluded this case of marine and coastal pollution, given that monitoring is still being carried out in the Bay of Raša.

The most significant activities to protect and prevent sudden marine pollution were also undertaken in June 2018, when the Turkish ship Haksa, which was sailing under the flag of the state of Palau, crashed. The accident happened on the open sea 12 miles from the island of Drvenik in the Split archipelago. The ship was carrying 3,000 tons of magnesite. The rescue operation of the sailors and the ship lasted for five days (from 17 to 21 June 2018). There was a sea penetration into the engine room and there was a danger of the ship sinking. The diver managed to temporarily repair the crack on the ship by welding, and the ship was towed to the Trogir shipyard. As the ship was located on the border of the Split-Dalmatia and Šibenik-Knin counties, the port authorities and cleaning ships of both counties took part in repairing the damage. The ship owner paid 212,413.00 HRK into the state budget for fines for misdemeanour orders, inspection and reimbursement of costs.

The demanding actions taken (pumping out the sea and multiple welding) prevented a possible large-scale accident for which, in the event of an accident, the National Intervention Plan would have to be applied.

In the event of a shipwreck, the cargo would spill into the sea and fuel would spill from the ship's tank. According to provision 2.1., item 10 of the National Intervention Plan, the Headquarters is the body responsible for the implementation of procedures and measures for anticipation, prevention, restriction, readiness for and response under the Intervention Plan and the Sub-regional Plan.

According to provision 3.2., item 37 of the National Intervention Plan, prevention and restriction measures include: identification, reduction and elimination of the danger of marine pollution.

The Headquarters, as the decision-making body, did not meet to discuss the protection and prevention of sudden marine pollution in the event of a Haksa shipwreck, and no written decisions were made and no minutes were drawn up. According to the explanation of the responsible persons, the Ministry and the commander of the Headquarters were informed of the above.

The State Audit Office is of the opinion that all information necessary for decision-making in cases of potential large-scale marine pollution should be reported in a timely manner to all persons who make up the Headquarters or the body responsible for decision-making so that activities and measures can be taken as soon as possible in the event of the need for prevention and limitation of marine pollution. Also, is of the opinion that in this way the Headquarters would take responsibility for the undertaken activities in the prevention of potential large-scale pollution, which according to the National Intervention Plan is the responsibility of the Headquarters.

According to the Primorje-Gorski Kotar County Regional Centre, two events of marine pollution with edible oil and powdery material occurred in the Kvarner area in 2017, while in one case the origin and composition of the pollution (Rijeka area) were not determined. In addition to the above, there were two sinkings of smaller boats without the consequences of marine pollution (the area of Crikvenica and Mali Lošinj).

In the area of the Port of Rijeka in 2018, there were two events of pollution with motor fuel from a cargo ship (Jaohar Adam) and a fishing boat (Katun). According to official records the Port Authority of Rijeka in May 2018, for the said cargo ship it was determined that due to the transfer of heavy fuel from the left side tank to the right side tank, approximately 1 m³ of fuel leaked into the sea. The misdemeanour order was raised against the commander of the ship in the amount of 30,000.00 HRK and the owner of the ship was obliged to pay the costs of remediation of pollution.

According to the explanation of the responsible persons of the Primorje-Gorski Kotar County, the costs of remediation are paid by the ship owners directly to the company that performs the remediation of the pollution. According to the annual report on the work of the Primorje-Gorski Kotar County Regional Centre, the remediation was carried out by a specialized company from Rijeka, which prevented the outflow of pollution outside the Port of Rijeka, and the resulting pollution was successfully remedied.

In June 2018, according to the report on the inspection of the Port Authority of Rijeka, there was a case of pollution in the Port of Rijeka from a fishing boat (Katun). The fishing boat leaned to the left and it was established that the sea had penetrated the engine room due to a malfunction. Due to the above, the Public Fire Brigade of the City of Rijeka was called in, which pumped oily water from the engine room, which prevented accidents and greater pollution of the sea.

In 2019, there were six cases of marine pollution, of which three with motor oils, two of unknown origin and composition and one with powdery material (the area of Rijeka, Opatija, Mali Lošinj, Kraljevica and Bakar) which were repaired. In 2017, 2018 and 2019, three cleaning boats operated by a specialized company from Rijeka participated in the remediation of cleaning, and when necessary, members of the diving club (Dupin Diving Club) also participated in the cleaning remediation.

During the audited period, the Regional Centre of Split-Dalmatia County participated several times in the organization and supervision of sea cleaning for minor pollution that was remedied with the help of cleaning boats. In the area of the Split-Dalmatia County in April 2017, there was one oil pollution in the length of 1,000 to 1,500 m (Kaštela Bay). In July 2017, a fire broke out on two vessels in the area of Kaštela Bay and near the island of Čiovo.

In April 2018, there was a minor oil pollution on the Gojač beach in Kaštela Bay. In June of the same year, the sinking of the Turkish cargo ship Haksa near the island of Drvenik was prevented.

In August 2018, oil pollution occurred near the Kaštela fortress in Kaštel Gomilica, a boat sank on the island of Brač and a fire broke out on a sailboat in the Split Channel. In June 2019, there was a minor pollution due to the sinking of a fishing boat in Stobreč. In July of the same year, a stranded yacht was towed to Kaštel Gomilica. Also, in July 2019, there was a minor pollution due to a yacht wreck near Milna on the island of Brač and the fire on the yacht near Jelsa on the island of Hvar was extinguished. In September 2019, there was a minor sea pollution after the ship ran aground in the Split waters.

According to Article 2 of the Intervention Plan of Primorje-Gorski Kotar County, it is prescribed that the said plan is applied in case of sudden marine pollution by oil and / or oil mixture proportions less than 2 000 m³ and for smaller scope and intensity of extraordinary natural event in the sea. According to the provision of Article 4.3. of the Intervention Plan of Split-Dalmatia County, the said plan is applied in case of sudden marine pollution with hydrocarbons (oils) in the amount of up to 2,000 m³, dangerous and harmful substances and in case of extraordinary natural events in the sea.

For pollution that occurred in the observed period from 2017 to the end of 2019, the Primorje-Gorski Kotar County and Split-Dalmatia County regional centres did not keep the necessary documentation such as the action log or make written decisions on how to remove marine pollution and other decisions specified in county intervention plans. From the obtained documentation of the mentioned regional centres, in some cases of sudden marine pollution, the extent of the pollution was not estimated, ie the estimated or actual amount of spilled oil or other material that polluted the sea was not indicated.

According to the explanation of the responsible persons, in the area of operation of regional centres in Primorje-Gorski Kotar County and Split-Dalmatia County during the observed period there was minor sea pollution due to which regional centres of these counties did not activate their county intervention plans. Since the county intervention plans were not activated, the prescribed documentation was not kept nor were the decisions prescribed by the aforementioned plans made.

For minor marine pollution for which it is not necessary to carry out major remediation and cleaning activities in the area under the jurisdiction of the regional centres, and in order to reduce administrative and other costs provided by the activation of county intervention plans, **the State Audit Office recommends to the Ministry, Primorje-Gorski Kotar County and Split-Dalmatia County to prescribe a step-by-step action plan and keep a log of the course of action for all marine pollution in the National Intervention Plan and County Intervention Plans.**

Furthermore, it recommends that the Primorje-Gorski Kotar County and the Split-Dalmatia County request the county regional centres to assess the extent of marine pollution for each sudden marine pollution and to publish the data on the county's website.

ASSESSMENT OF THE EFFECTIVENESS OF MANAGING INTERVENTIONS IN CASE OF SUDDEN POLLUTION IN THE ADRIATIC SEA

The State Audit Office audited the effectiveness of managing interventions in the case of sudden pollution in the Adriatic Sea. The audit objectives were to check the legal framework regarding managing interventions in case of sudden pollution, to check the organization of managing interventions, to assess the effectiveness of the system in managing interventions for sudden marine pollution and to check the activities of competent authorities.

Based on the audit findings, applying the established criteria, the State Audit Office assessed that the Ministry, the Primorje-Gorski Kotar County and the Split-Dalmatia County have established responsible bodies (Headquarters, National Centre and County Regional Centres) in accordance with regulations and undertake activities related to the implementation of procedures and measures for anticipation, prevention, limitation and preparedness to respond to sudden marine pollution. The Republic of Croatia has normatively and organizationally regulated the management of interventions in the event of sudden marine pollution, whereby it is necessary to harmonize the provisions of the National Intervention Plan with the Act on Amendments to the Maritime Code (Official Gazette 17/19). However, certain weaknesses of the system related to insufficient equipment and lack of experts in managing the intervention in case of sudden marine pollution with fuel in the Bay of Raša 2018 were identified. It was determined that the county intervention plans of the Primorje-Gorski Kotar County and the Split-Dalmatia County are not activated for minor marine pollution and shipwrecks, but the competent regional centres successfully implement interventions in their area to limit pollution and remediation of small-scale marine pollution, as well as the prevention of potential shipwrecks.

The State Audit Office assessed that managing interventions in case of sudden pollution in the Adriatic Sea under the jurisdiction of the Primorje-Gorski Kotar and the Split-Dalmatia County is **effective, but need some improvements**, because there were certain weaknesses identified that do not significantly affect management of interventions in case of sudden pollution in the Adriatic Sea.

Managing interventions in case of sudden pollution in the Adriatic Sea within the competence of the Ministry of the Sea, Transport and Infrastructure is assessed as **partially effective**, because the National Intervention Plan is not harmonized with the amendments to the Maritime Code, the Republic of Croatia does not have sufficient equipment to prevent and limit the larger-scale marine pollution, the education program is not organized in such a way that there is a company or institution that implements an accredited training program, does not update the list of legal entities and craftsmen registered and authorized to implement intervention measures or eliminate the consequences of sudden pollution of the sea and coast and their equipment and assets with the lists of county regional centres. The National Intervention Plan does not clearly define the responsibilities and tasks of the members of the Headquarters and regional centres.

The State Audit Office makes the following recommendations to the Ministry, the Primorje-Gorski Kotar County and the Split-Dalmatia County, according to the areas of audit:

1. Legislative framework for the protection and preservation of the marine environment and the prevention and removal of pollution

- 1.1. The National Intervention Plan for sudden marine shall determine the manner and conditions of professional training and professional training programs of participants in the implementation of procedures and measures, the manner and conditions of equipment and use of material, technical and other means, the manner and conditions of implementing procedures and measures in offshore exploration and exploitation of hydrocarbons and manner of maintaining order and safety in interventions. (Ministry)
- 1.2. The National Intervention Plan shall specify the manner in which special purpose ports concessionaires and port authorities should participate in the implementation of the National Intervention Plan, given the fact that under the provisions of the Maritime Code they are obliged to immediately take measures to prevent the spread of contamination and eliminate pollution. (Ministry)

2. Intervention management system for sudden pollution in the Adriatic Sea

- 2.1. Make an assessment of the risk and sensitivity of the environment from marine pollution in accordance with the county intervention plan. (Split-Dalmatia county)
- 2.2. Appoint the Secretary of Headquarters. (Ministry)
- 2.3. Appoint the Secretary of the County Regional Centre. (Split-Dalmatia County)
- 2.4. Determine by the Intervention Plan of the Split-Dalmatia County the adoption of the Rules of Procedure of the County Regional Centre and request its adoption. (Split-Dalmatia county)
- 2.5. Regularly update the list of legal entities and craftsmen registered and authorized to implement intervention measures (removal of consequences caused by sudden pollution of the sea and coast) and their equipment and assets with lists of county regional centres. (Ministry)
- 2.6. The National Intervention Plan should determine a lower range (less than 2,000 m³) of oil spilled into the sea for activities of county regional centres in county intervention plans, in accordance with the needs and possibilities. (Ministry)
- 2.7. In cooperation with the Ministry of Defence, determine the necessary equipment for the activities of the Coast Guard in preventing and limiting marine pollution in the area of the Protected Ecological-Fishing Zone, and if necessary in the territorial sea and inland waters. (Ministry)
- 2.8. Appoint the responsible person to perform the tasks of readiness and response to sudden marine pollution in accordance with the provision of Article 4 of Annex of the Contract concluded in December 2019 with the competent ministry. (Split-Dalmatia county)

- 2.9. Purchase and / or rent equipment and vessels that will be available in the event of sudden marine pollution of smaller and larger scale. (Ministry)

3. Activities of the competent authorities in managing interventions in case of sudden pollution in the Adriatic Sea

- 3.1. The National Intervention Plan and the county intervention plans shall prescribe a step-by-step procedure and keep a log of the course of action for all marine pollution. (Ministry, Primorje-Gorski Kotar County and Split-Dalmatia County)
- 3.2. Ask the county operational centres to estimate the extent of marine pollution for each sudden marine pollution and publish the data on the county's website. (Primorje-Gorski Kotar County and Split-Dalmatia County)

The State Audit Office is of the opinion that the implementation of these recommendations would improve the harmonization of the provisions of the National Intervention Plan with the Maritime Code, establishing clearer responsibilities and tasks of members of the Headquarters and county operational centres, increased capacity to manage large-scale marine pollution, harmonized records of craftsman and their equipment and assets and current availability and regular maintenance of equipment, hiring of experts and training of people involved in decision making and implementation of measures for preventing and limiting marine pollution by the program accredited by the competent authority, which would increase efficiency in managing interventions in case of sudden marine pollution in the Republic of Croatia.

STATEMENT OF AUDIT SUBJECTS

Statement of the Ministry

The Ministry responded to the Draft Report on the Audit of the effectiveness of managing interventions of sudden pollution in the Adriatic Sea.

In connection with establishing the ways and conditions of professional training and programs of participants in the implementation of procedures and measures, ways and terms of equipping and use of material, technical and other resources in the implementation of procedures and measures for offshore exploration and exploitation of hydrocarbons and the manner and maintaining order and security the interventions, the Ministry explained that all shall be prescribed by new National Intervention Plan, which is in the drafting process.

Regarding the determination of the manner in which concessionaires of special purpose ports and port authorities should participate in the implementation of the National Intervention Plan, the Ministry explains that the new National Intervention Plan will determine the manner in which all state and public authorities, ship owners or owners of maritime facilities and bodies managing the ports, which have the capacity and can contribute to the implementation of measures in accordance with the provisions of the Maritime code, as well as the person responsible for offshore exploration and exploitation of hydrocarbons, shall undertake measures in accordance with the National Intervention Plan.

Regarding the regular updating of the list of legal entities and craftsmen registered and authorized to implement intervention measures (removal of consequences caused by sudden pollution of the sea and coast) and their equipment and assets with the lists of county operational centres, the Ministry explains that it has published a list of craftsmen, dynamics and content as the data on the above are received.

Regarding the determination of a lower range (less than 2,000 m³) of spilled oil into the sea for the operation of county operational centres according to county intervention plans in accordance with needs and possibilities, the Ministry explains that the National Intervention Plan, which is in the process of development, provides for an intervention system based on the principles of security, subsidiarity, gradation, solidarity and continuity of action. Furthermore, explains that these principles provide a maintenance level of responsiveness of all involved stakeholders and the further improvement of sea protection needs to provide answers to sudden pollution, as well as support in the implementation of intervention in cases where incidental event goes beyond the ability to react at individual levels (local, regional and national).

In connection with the cooperation with the Ministry of Defence, which would determine what equipment for controlling marine pollution is available to the Coast Guard and what equipment is needed for the operation of the Coast Guard in preventing and limiting marine pollution in the Protected ecological-fishing belt, and if necessary in the territorial sea and internal waters, the Ministry explains that the Coast Guard Act of the Republic of Croatia stipulates that the Coast Guard is a body established within the Croatian Army, responsible for monitoring and protecting the rights and interests of the Republic of Croatia at sea. The Coast Guard is an integral part of the Croatian Navy, and the organization of the Coast Guard is adopted by the President of the Republic of Croatia in a structure book at the proposal of the Government of the Republic of Croatia. The funds and components of the Coast Guard have also been determined, and it is prescribed that the Minister of Defence shall determine by decision such means and components within the Croatian Army, which may be used to perform the duties of the Coast Guard. Furthermore, the Ministry argues that the provisions of the said Act stipulate that the Coast Guard may use the funds of other state administration bodies, in accordance with the concluded contract with those bodies, whereby the use of these funds is carried out in accordance with the orders of the Coast Guard commander.

The Coast Guard of the Republic of Croatia is a component of the Armed Forces and is therefore subject to special regulations in the field of defence. The representative of the Coast Guard of the Republic of Croatia is a member of the Headquarters for the Implementation of the National Intervention Plan.

Furthermore, the Ministry argues that the representative of the Coast Guard is present at every session of the Headquarters, reports on resources and their status, and that the Coast Guard has to implement the National Intervention Plan. The provisions of the Coast Guard Act of the Republic of Croatia determine the manner of using the material resources of the Coast Guard to perform activities. For the purposes of implementing the National Intervention Plan, the Coast Guard has determined the use of the ship "Faust Vrančić", which has the appropriate technical predispositions for activities to combat marine pollution. The Ministry provided practical and theoretical training to Coast Guard personnel in handling marine pollution control equipment. Also, the Ministry has provided expert and technical support to the Coast Guard and gave support to adjust the ship "Faust Vrančić" for the execution of tasks from the National Intervention Plan.

Regarding the procurement and / or rental of equipment and vessels that will be available in case of sudden marine pollution of small and large scale, the Ministry explains that during 2019 it made an analysis of the necessary vessels, means and equipment for interventions in case of sudden marine pollution.

In addition to the above, it included all types of services that were deemed necessary for the implementation of interventions in the event of sudden marine pollution, and are available in the Croatian part of the Adriatic Sea. The subject analysis was used as an expert basis in the development of detailed technical specifications and cost estimates needed to conduct an open procurement procedure for concluding a multi-annual framework agreement with several economic operators, published in late 2020. These technical specifications set out in detail the characteristics of vessels, assets, equipment and services necessary for intervention at sea and coast, as well as specified services from the accompanying logistics chain in the process of implementing interventions until the final disposal of pollution, all with the determined quantities in the cost estimate which is an integral part of the tender documentation. Then on the basis of analysis detailed technical specifications and cost operations were made for the acquisition of items of documentation, which include the entire process of carrying out interventions, ensuring the containment of contaminants, those collecting cleaning, transport of contaminants to the final disposal of contaminants.

In connection with the national and county intervention plans that would set the stepwise procedure of action and having a log for course of action for all marine pollution, the Ministry argues that the Adriatic is extremely environmentally sensitive and any pollution, even that small scale, can pose a threat to his good condition. Furthermore, the Ministry argues that any pollution requires treatment appropriate to its size and potential consequences, while the management of interventions needs to be effective.

Statement of the Primorje-Gorski Kotar County

The Primorje-Gorski Kotar County stated that they consider the facts presented in the Draft Report to be objective and the opinion expressed that the management of interventions in the event of sudden pollution in the Adriatic Sea within the competence of the Primorje-Gorski Kotar County is effective.

Regarding the county intervention plan which would prescribe a step-by-step procedure and keeping a log of the course of action for all marine pollution, it states that after regulating the procedure for dealing with minor pollution, a proposed procedure will be developed.

In connection with the evaluation of the regional centres on the extent of pollution of each sudden pollution and public disclosure on the website of the county, states that, in accordance with Article 32 of the County Plan intervention, for every reported pollution Inspector of the Port Authority of Rijeka performs the investigation. In doing so, sea samples shall be taken as necessary and further measures shall be taken on the basis of the assessment. Inspectors write official records of all inspections, and the engaged pollution remediation company submits a report.

Furthermore, log on the course of action of the regional centres is made only if the county intervention plan is activated. The commander of the regional centres informs the county about such events, and then the public. Furthermore, states that the National Intervention Plan and county intervention plan shows that regional centres inform the public of any pollution, whether lower or higher (up to 2000 tons of oil spilled in the sea). Also, according to the Primorje-Gorski Kotar County in the county intervention plan is not prescribed the obligation to inform the public about pollution daily on the basis of press conferences and press releases in the media and other media because lesser pollution is promptly repaired and they are no longer interesting. For major marine pollution, in accordance with the intervention plans, the public is regularly informed immediately through a press conference. Furthermore, the Primorje-Gorski Kotar County will publish data on all pollutants on the County's website, through annual reports on the work of the county centre in which all pollutants are recorded.

Statement of the Split-Dalmatia county

The Split-Dalmatia County commented on the Draft Report on the Audit of the effectiveness of intervention management in the event of sudden pollution in the Adriatic Sea. Regarding the implementation of the given recommendations of the State Audit Office, the County states that the adoption of the new County Intervention Plan is preceded by the adoption of the new National Intervention Plan.

Regarding the adoption of the Rules of Procedure of the Regional Centre of the Split-Dalmatia County, the County states that the Regional Centre of the Split-Dalmatia County has in the meantime adopted the Rules of Procedure.

Annex 1

Number of arrivals of ships that docked in Croatian ports
in national and international navigation

Year	In total	Passenger transport	Freight transport	Other transport	Ships carrying oil or hazardous and noxious substances	
					Ships with dangerous and harmful substances	Ships carrying oil and other petroleum products
2017	354 473	315 358	10 455	28 660	1 259	818
2018	389 767	350 791	13 204	25 772	1 159	797
2019	400 215	361 237	15 528	23 450	2 118	770

Annex 2

Number of transported passengers and transhipped cargo of dangerous and harmful substances, oil and petroleum products in Croatian ports in national and international navigation

Year	Number of transported passengers in Croatian ports	Cargo transhipment in Croatian ports in tons	
		Hazardous and noxious substances	In Further, oil and petroleum products
2017	37 837 377	2 674 400	13 414 351
2018	53 596 570	2 850 022	11 889 706
2019	42 853 538	3 429 096	10 386 701

Annex 3

Number of members of civil protection and firefighting

COUNTY	Civil protection										Firefighting	
	Civil protection headquarters	Number of employees exclusively on CP jobs	Number of employees in CP jobs with other areas covered by JLPRS	General purpose civil protection troops		Specialist purpose civil protection troops		Civil protection commissioners / deputies		On-site coordinators	JVP	DVD
Name	Number of members	Number of employees	Number of employees	Number of units	Number of members	Number of units	Number of members	Number of commissioners	Number of deputies	Number of nominees	Number of members	
Adriatic Croatia												
Istrian County	468	2	44	40	1 098	39	874	114	112	0	226	1 025
Primorsko Goranska county	383	2	16	24	692	2	98	165	80	8	242	924
Lika-Senj County	163	1	12	5	75	0	0	110	110	23	55	306
Zadar County	356	1	32	31	693	7	90	186	184	7	158	739
Šibenik-Knin County	191	0	21	12	379	4	27	90	82	5	122	583
Split-Dalmatia county	523	3	50	85	1 467	13	295	931	876	14	237	1 548
Dubrovnik-Neretva County	221	0	23	22	369	11	202	238	238	39	329	1 540
In total	2 305	9	198	219	4 773	76	1 586	1 834	1 682	96	1 369	6 665
Continental Croatia												
Zagreb County	311	3	29	19	612	22	257	50	0	43	205	3 692
Krapina-Zagorje County	322	0	30	14	363	0	0	267	189	81	83	1 651
Sisak-Moslavina County	226	2	1	13	430	4	89	262	262	1	112	1 590
Karlovac County	222	1	0	0	0	3	53	146	131	0	72	1 089
Varazdin county	276	0	30	4	84	3	275	447	437	43	136	3 770
Koprivnica-Križevci County	189	1	19	6	147	5	232	313	231	134	236	2 135
Bjelovar-Bilogora County	238	0	24	5	162	1	20	276	223	26	116	793
Virovitica-Podravina County	185	1	19	13	330	0	0	284	150	101	39	581
Požega-Slavonia County	114	0	11	10	290	8	176	192	219	75	39	237
Brod-Posavina County	308	0	28	28	746	8	172	306	306	0	65	750
Osijek-Baranja County	425	7	40	56	902	5	96	251	243	60	219	5 070
Vukovar-Srijem County	308	2	33	30	884	0	0	96	105	74	81	1 131
Međimurje County	241	0	26	6	186	1	20	201	187	99	35	1 107
City of Zagreb	19	8	17	17	3 031	13	800	427	0	0	456	6 700
In total	3 384	25	307	221	8 167	73	2 190	3 518	2 683	737	1 894	30 296
Total Republic of Croatia	5 689	34	505	4 40	12 940	149	3 776	5 3 5 2	4 365	833	3 263	36 961

LIST OF ABBREVIATIONS USED

ADRIREP – The Adriatic Traffic Reporting System
 AIS – Automatic Identification System
 ATRAC – Adriatic Training and Research Centre
 BUNKER – International Convention on Civil Liability for Bunker Oil Pollution Damage
 CECIS – Common Emergency Communication and Information System
 CIMIS – Croatian Integrated Maritime Information System
 CLC – International Convention on Civil Liability for Oil Pollution Damage
 COLREG – Convention on the International Regulations for Preventing Collisions at Sea
 CP – Civil Protection
 DVD – Volunteer Fire Department
 EMSA – European Maritime Safety Agency
 ERCC – Emergency Response Coordination Centre
 GIS – Geographic Information System
 GPS – Global Positioning System
 IMO – International Maritime Organization
 JLPRS – Local and Regional Self-government Unit
 JVP – Public Fire Department
 LC 1972 – International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, the "London Convention" for short
 LRIT – Long Range Identification and Tracking
 MAP – Mediterranean Action Plan
 MARPOL – International Convention for the Prevention of Pollution from Ships
 Ministry – Ministry of the Sea, Transport and Infrastructure
 National Centre – Maritime Rescue and Coordination Centre
 National Intervention Plan – Intervention plan for sudden marine pollution
 OILMAP – Oil Spill Model System
 OILPOL – International Convention for the Prevention of Pollution of the Sea by Oil OPRC
 - International Convention on Oil Pollution Preparedness, Response and Co-operation
 POLREP – Pollution Reporting System
 REMPEC – Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea
 SAR – International Convention on Maritime Search and Rescue
 SOLAS – International Convention for the Safety of Life at Sea
 Headquarters – Headquarters for the Protection of Sea against Pollution
 UNCLOS – United Nations Convention on the Law of the Sea
 UNEP – United Nations Environment Program
 VDR – Voyage Data Recorder
 VTMISS – Vessel Traffic Monitoring and Information System
 VTS – Vessel Traffic System
 ZERP – Protected Ecological-Fishing Zone
 WRC – International Convention on the Removal of Wrecks