PROCEEDINGS WITH CHEMICAL WARFARE AGENTS DUMPED IN THE BALTIC SEA IN CASE OF CONTACT – LEGAL ASPECTS ON THE EXAMPLE OF POLAND

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Abstract

In the Baltic states, in the national legal acts there are provisions about the conduct and storage of chemical substances, but they do not contain specific information on the management of chemical munitions abandoned in the Baltic Sea. Some countries have specific programs under which activities are carried out on the removal of chemical munitions. In international documents, one can find records about the prevention of pollution of the marine environment by harmful substances, which include dumped chemical ammunition. The review and analysis of national legislation pointed out that in Poland there are no strictly records concerning chemical munitions and how to manage with it when it comes to contact or disposal. The exception is The National Crisis Management Plan and The Manual of conduct in case of entrapping chemical munitions given by Director of the Maritime Authority in Gdynia. Extremely important from the point of view of handling chemical munitions is the creation of unified action plans based on national plans in the event of fishing or dumping of CWA on beaches and the same method of utilization of deposits contaminated with CWA.

Keywords: *National Law, crisis management, chemical warfare agent, Baltic Sea*

1. INTRODUCTION

On the basis of the provisions of the Potsdam Agreement (signed in August 1945), which concerned: "all weapons, ammunition and means of warfare and all objects specialized in its production will be put at the disposal of the Allied countries or will be destroyed. Preventive measures will be taken to prevent the production of all types of aircraft, weapons, ammunition and means of warfare." the anti-Hitler coalition states have begun destroying the excess of war profits, including chemical weapons. The analysis of the available documentation, carried out after many years, showed that from 42,000 to 65,000 tons of chemical munitions produced in Germany until the end of World War II was deposited on the bottom of the Baltic Sea. Unconfirmed testimonies from witnesses prove that these amounts may be much larger.

It was mainly weapon of German origin, the process of dumping was supervised by Allied and Soviet Armies. The toxic warfare, often dumped in relatively shallow waters and areas of active fishing, is a serious threat to the marine environment and also to the often densely populated European coasts. As many dumping operations were carried out stealthily, there is very little information about the place of its deposition and also it is not always clear who is responsible for the disposal. Some dump sites are located in the international water, beyond any particular nation’s responsibility, although more of the dumping operations were carried out in the territorial waters near the borders of neighboring states (Missiaen & Henriet, 2002). The largest part of chemical warfare agents (CWA) which was stored in Wolfgast in Germany was dumped in the Baltic Sea and Skagerrak Strait (Bełdowski, et al., 2014). Although there is no official record of the dumping sites, operations often took place in chaotic circumstances right after the war, there is also the lack of documentation and the loss of destruction of records (Tine, et al., 2010). As far as the Baltic Sea is concerned the most important dump sites are located in the Little Belt, close to Bornholm Island and in the Gotland Basin. British and American occupation forces sank approximately 41-43 vessels in Skagerrak. Containing approximately 150 000 t of chemical weapons and conventional ammunition. Other occupation forces nationalities, e.g. French, also dumped two vessels containing 1500 t of chemical warfare agents. In addition substantial amounts of chemical weapons were dumped in the Baltic Sea (Table 1).

Table 1. Quantities of chemical munitions and warfare agents dumped in the Baltic Sea (Glasby,1997)

Area	Quantities of munitions (t)	Estimated quantities of warfare agents (t)	Types of warfare agents
Bornholm Basin	35 300 (certain) to 43 300 (uncertain)	5300-6500	Mustard gas Viscous mustard gas Clark I Clark II Adamsite Chloroacetophenone Less certain Phosgene Nitrogen mustard Tabun
Area SW of Bornholm	Up to 15 000 (uncertain)	2250	Unknown
Gotland Basin	2000	300	Unknown
Little Belt	5000	750	Tabun Fosgene

Two vessels containing nerve agents (tabun) were dumped by Germans before the end of the war in the Little Belt near Denmark. Also Soviet Military Administration dumped approximately 32000 t of chemical munitions near Bornholm Island in the Bornholm Basins and 2000 t of chemical munitions in the Gotland Basin. Dumped material consisted of projectiles, aerial bombs, drums, mines and containers filled with CWA. The reason why those places were chosen for depositing of chemical munitions was hydrological conditions i.e. stable stratification with anoxic conditions developing below the halocline and very gentle bottom currents except for the period of seasonal flashing of the basins (Glasby, 1997).

The problem of post-war chemical munitions dumped in the seas and oceans, despite many actions being taken, is still unresolved. The mining of submerged ammunition creates many obstacles, however, action must be taken at national and international level that would be able to prevent the risks posed by unaware contact of the fact of the threat they face. Analysis of the legal aspects of the treatment of submerged ammunition indicates that these provisions in the case of contact with submerged ammunition are not comprehensive, there is no coherence in them, there are also no uniform patterns of proceedings in the aforementioned cases.

In the Baltic states, in the national legal acts there are provisions about the conduct and storage of chemical substances, but they do not contain specific information on the management of chemical munitions abandoned in the Baltic Sea. Some countries have specific programs under which activities are carried out on the removal of chemical munitions.



Fig. 1. Dumping of chemical munitions in the Baltic Sea (Bełdowski, et al., 2014)

There are also unofficial dump sites like Gdansk Deep and the Słupsk Furrow (Fig. 1), and probably transport routes from Wolgast Harbour to designated dumping sites (Bełdowski, et al., 2014). Objects, that were thrown overboard, were usually packed in wooden crates which within past years might have been washed ashore on the coast near the dumping sites.

2. INTERNATIONAL LAW

In international documents, one can find records about the prevention of pollution of the marine environment by harmful substances, which include dumped chemical ammunition. The convention on the High Seas, article 25 states that:

1. Every State shall take measures to prevent pollution of the seas from the dumping of radioactive waste, taking into account any standards and regulations which may be formulated by the competent international organizations.
2. All States shall cooperate with the competent international organizations in taking measures for the prevention of pollution of the seas or air space above, resulting from any activities with radioactive materials or other harmful agents. (Convention on the High Seas, 1958).

Another convention, that is important for the protection of the marine environment and prevents pollution by prohibiting discharges of substances that may threaten the marine environment, is the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London 1972). Under the provisions of the Convention, the contracting parties should individually promote effective control of all sources of environmental pollution, and undertake to take all practical steps to prevent sea pollution from landfilling and other materials that could pose a threat to human health and damage living resources and marine life. The first article states that the contracting parties will support effective control of all sources of pollution of the marine environment and undertake to take practical steps to prevent sea pollution by storing waste and other hazardous materials. Human health, harm living resources and marine life, harm facilities or interfere with other legal uses of the sea (London Convention, 1972). Article XII also mentions a chemical warfare agent, as stipulated in:

> The Contracting Parties pledge themselves to promote, within the competent specialized agencies and other international bodies, measures to protect the marine environment against pollution caused by:
>
> (a) hydrocarbons, including oil and their wastes;
>
> (b) other noxious or hazardous matter transported by vessels for purposes other than dumping;
>
> (c) wastes generated in the course of operation of vessels, aircraft, platforms and other man-made structures at sea;
>
> (d) radio-active pollutants from all sources, including vessels;
>
> (e) agents of chemical and biological warfare;
>
> (f) wastes or other matter directly arising from, or related to the exploration, exploitation and associated off-shore processing of sea-bed mineral resources (London Convention, 1972).

Also, in Annex I, paragraph 7, chemical munitions are listed as one of the elements whose deliberate release to the sea is prohibited by the Convention in Article IV, paragraph 1, to the above convention (London Convention, 1972).

The Convention on the Protection of the Marine Area of the Baltic Sea (Helsinki Convention) was signed in Helsinki in 1992 and is one of the most important regional documents regarding the protection of both the waters and the bottoms of the Baltic Sea. The convention also covers the catchment area of the Baltic Sea with its impact. Its aim is to eliminate all kinds of pollutants in order to maintain ecological balance in the area of the Baltic Sea.

In the convention 'dangerous substance' means any harmful substance which as a result of its specific properties is persistent, toxic or biologically accumulates. By contrast, "pollution incident" means an event or series of events of common origin that cause or may cause oil or other harmful substances to spill over and which pose or may pose a threat to the marine environment of the Baltic Sea or coastline or to the interests of one or more Contracting Parties that require emergency response or other immediate measures (Helsinki Convention, 1992).

According to article 3 section 1 The Contracting Parties shall individually or jointly take all appropriate legislative, administrative or other relevant measures to prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea Area and the preservation of its ecological balance (Helsinki Convention, 1992). The convention in relation to the Contraction Parties requires the application of the polluter–pays principle (article 3, sec. 4). Moreover, for the purposes of this

convention The Baltic Marine Environment Protection Commission was established, referred to as "the Commission"(art. 19). The duties of the Commission shall be, according to Article 20 d), to define pollution control criteria, objectives for the reduction of pollution, and objectives concerning measures, particularly those described in Annex III. According to scientific and technological cooperation (article 24, section 2) (...) the Contracting Parties undertake directly, or when appropriate, through competent regional or other international organizations, to promote studies and to undertake, support or contribute to programmes aimed at developing methods assessing the nature and extent of pollution, pathways, exposures, risks and remedies in the Baltic Sea area. In particular, the Contracting Parties undertake to develop alternative methods of treatment, disposal and elimination of such matter and substances that are likely to cause pollution of the marine environment of the Baltic Sea area (Helsinki Convention, 1992).

Another document, which may be treated as one of the most important concerning problem of chemical warfare agents, is the Chemical Weapons Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, commonly referred to as the Chemical Weapons Convention, entered into force on April 29, 1997. This document is said to be one of the world's most widely accepted conventions. It is ratified by 190 states parties, and only six states lack the participation. The main aim of this convention is to ensure the destruction of CW stockpiles and thus resolving the problem (Bełdowski, et al., 2014). Although it is above it was mentioned as one of the most important, it only applies to chemical weapons abandoned on land since 1977 or dumped at sea since January 1, 1985.

3. NATIONAL LAW

3.1. Constitution of the Republic of Poland

In reference to Polish National law, the most important document in which the information on duties of State in protection the natural environment and citizens are included, is Constitution (1997), where one can read: (The Republic of Poland, Constitution, 1997)

> *Article 5*
>
> The Republic of Poland shall safeguard the independence and integrity of its territory and ensure the freedoms and rights of persons and citizens, the security of the citizens, safeguard the national heritage and shall ensure the protection of the natural environment pursuant to the principles of sustainable development.
>
> *Article 68*
>
> *Section* 4 Public authorities shall combat epidemic illnesses and prevent the negative health consequences of degradation of the environment.
>
> *Article 74*
>
> 1. Public authorities shall pursue policies ensuring the ecological security of current and future generations.
> 2. Protection of the environment shall be the duty of public authorities.
> 3. Everyone shall have the right to be informed of the quality of the environment and its protection.
> 4. Public authorities shall support the activities of citizens to protect and improve the quality of the environment.
>
> *Article 228*
>
> 1. In situations of particular danger, if ordinary constitutional measures are inadequate, any of the following appropriate extraordinary measures may be introduced: martial law, a state of emergency or a state of natural disaster.

2. Extraordinary measures may be introduced only by regulation, issued upon the basis of statute, and which shall additionally require to be publicized.
3. The principles for activity by organs of public authority as well as the degree to which the freedoms and rights of persons and citizens may be subject to limitation for the duration of a period requiring any extraordinary measures shall be established by statute. (The Republic of Poland, Constitution, 1997)
4. A statute may specify the principles, scope and manner of compensating for loss of property resulting from limitation of the freedoms and rights of persons and citizens during a period requiring introduction of extraordinary measures.

3.2. Act on Crisis Management

Article 10

1. The Government Centre for Security shall be established, hereinafter referred to as the 'Centre' in the form of a state budget unit subordinated to the Prime Minister (Republic of Poland, Act on Crisis Management, 2017).

The Government Center for Security is preparing in accordance with the Act on Crisis Management, the National Crisis Management Plan (NSDC), which is the basic document regulating crisis management among others the case of incidents with chemical munitions. It contains a general summary of individual types of threats and central level institutions responsible for implementing projects in accordance with the crisis management model adopted in Poland

Article 25

If in a crisis situation the use of other capabilities and resources is impossible or may prove to be insufficient, unless other regulations state otherwise, the Minister of Defence, at the request of the voivode may provide him with subunits or units of the Armed Forces of the Republic of Poland, hereinafter referred to as the 'Armed Forces units' and assign them to carry out crisis management tasks (Republic of Poland, Act on Crisis Management, 2017).

The Armed Forces units may participate in the performance of crisis management tasks, according to their specialist training and pursuant to the voivodeship crisis management plan. The tasks, as referred to in Section 2 of the Article 25, shall include:

1) participation in the monitoring of threats;

2) performance of tasks related to the evaluation of the effects of events that occurred in the area where the threats exist; (…)

7) isolation of the area where the threats exists or the place where the rescue operation is carried out;

8) performance of protective, rescue and evacuation activities on threatened buildings and historical buildings and monuments;

9) performance of activities requiring the use of specialist technical equipment or explosive from the resources of the Armed Forces of the Republic of Poland;

10) removal of dangerous materials and their neutralization using capabilities and resources at the disposal of the Armed Forces of the Republic of Poland;

11) elimination of chemical contamination as well as biological contamination and infections; (….) (Republic of Poland, Act on Crisis Management, 2017).

3.3. National Crisis Management Plan

The National Crisis Management Plan (NCMP) is a planning document prepared by the Government Security Center in cooperation with ministries, central offices and voivodships, based on the Act on Crisis Management. It was developed in particular for the needs of the Prime Minister and the Council

of Ministers. It is an initial document in the civil planning process at the central and provincial level (National Security Center, 2017).

At NCMP, 19 hazards have been identified in the safety net: flood, epidemic, chemical contamination, disruption of telecommunications systems and services, disruption in energy, fuel and gas systems, severe frost, intense snowfalls, hurricane, large-area fire, epizootics, epiphytosis, sea catastrophe, drought, heat, radiation pollution, collective public disturbance, terrorist event, disruption in the functioning of networks and information systems, and hybrid activities (National Security Center, 2017).

NCMP includes a.o.:

- tasks in the field of threat monitoring
- crisis response procedures, defining how to proceed in crisis situations - a list of directories and task modules of ministers and voivods
- cooperation between services participating in the implementation of planned emergency projects;

In the field of chemical contamination NCMP also refers to release of chemical warfare agents from dumped chemical weapons repositories, caused by the corrosion of containers. It also states areas of dumping chemical warfare (known currently) (National Security Center, 2017).

There are also tasks and responsibilities of crisis management participants, in case of chemical contamination in the sea, among which are: The minister competent for maritime economy and the maritime administration, Search and Rescue Service - leading entity. Cooperating entities are: Minister responsible for the environment, Minister competent for public administration, Minister of National Defence (Navy), Minister competent for internal affairs (Border Patrol), The Government Center for Security (National Security Center, 2017).

Unfortunately in the NCMP, only in the part concerning chemical contamination at sea carried out during the prevention phase, there is one record of warfare toxic agents, which imposes on the Navy a task consisting in the successive identification and elimination of threats from sunken chemical agents.

Other documents that should regulate crisis management in the case of incidents with post-war chemical munitions are: voivodeship, poviat and communal crisis management plans. Plans are developed in accordance with the requirements set out Enactment No. 16 Of The Minister of Internal Affairs And Administrations of 20 April 2017 on guidelines for provincial crisis management plans (Republic of Poland, Enactment Of The Minister Of Internal Affairs And Administrations, 2017). The plans define the rules for the participation of public administration at the provincial, poviat and commune levels as well as services, inspections and guards in responding to all phases of crisis management, i.e. prevention, preparation, response and reconstruction. In addition, the plans are supporting tools for the work of Crisis Management Teams at the appropriate levels of administration (voivodship, poviat, commune). The essence of the actions set out in the Plan is to quickly detect the threat and develop actions that will help to prevent or limit the consequences of crisis (Republic of Poland, Enactment Of The Minister Of Internal Affairs And Administrations, 2017).

Analysis of available provincial plans (for the Pomeranian and West Pomeranian Voivodships), poviat and commune voivodships (for communes and poviats located in the coastal zone) in terms of taking into account the risks that may occur after entrapping or dumping chemical munitions and actions to be taken, allows to state that only in a few cases (e.g. Crisis Management Plan for the Kosakowo commune) threats of post-war ammunition chemical from among all threats of chemical contamination. This situation means that the management procedures developed in the plans are identical to chemical contamination and contamination as a result of the release of warfare toxic agents, and, in accordance the above, identical forces and resources are separated to eliminate threats. Such an approach to the threats of chemical munitions causes, in the best case, a significant extension of the chain of institutions, services and guards involved in the rescue operation, and, considering the worst scenarios, it should be stated that not precisely defined forces and measures and ways of their

actions can lead to permanent damage to the health of the victims, even their deaths (Pomeranian Vovoideship Office, 2017, The Kosakowo Commune Office, 2011).

3.4. Enactment No. 16 Of The Minister Of Internal Affairs And Administrations of 20 April 2017 on guidelines for provincial crisis management plans

The basic objective of the Guidelines is to unify the principles of preparing voivodeship crisis management plans (VCMP) and increase the level of their functionality and usefulness. Guidelines for plans are an auxiliary document addressed to voivodes, indicating elements that should be taken into account when preparing plans (Republic of Poland, Enactment Of The Minister Of Internal Affairs And Administrations, 2017).

3.5. Regulation Of The Minister Of Internal Affairs And Administrations of 3 July 2017 on the detailed organization of the National Firefighting and Rescue System

Article 1

The regulation defines a detailed organization of the National Firefighting and Rescue System, hereinafter referred to as "NFRS", in particular in the scope of:

3) technical, chemical, ecological and medical rescue (Republic of Poland, Regulation Of The Minister Of Internal Affairs And Administrations , 2017);

This document includes developed principles for organizing rescue operations, development of rules for organizing rescue exercises, increasing operational readiness, analyzing events; development of principles for the organization of activities of specialized water and diving rescue teams in the book, development of principles for the organization of chemical and ecological rescue in a NFSR (article 4, *Section* 3).

Article 16,

Section 1

The NFRS in the field of chemical and ecological rescue includes planning, organizing and carrying out rescue actions necessary to reduce or eliminate direct threats posed by substances hazardous to people, animals, the environment or property.

Section 2

Rescue operations referred to in paragraph 1, include in particular:

1) identification and identification of threats;

2) securing the zone of rescue operations, including the designation and marking of the danger zone;

3) enabling or disabling installations, devices and utilities that affect the safety of endangered or injured persons and the safety of rescuers, using valves or fuses that are on the utility installation of the facility covered by the rescue operation;

4) priority execution of activities enabling:

a) reaching and performing access to endangered or injured persons, including carrying out medical rescue operations, or evacuating outside the danger zone,

b) preparation of escape routes for endangered or injured persons and rescuers,

c) ensuring the safety of vulnerable or injured persons and rescuers,

d) evacuating and saving persons, and then animals, saving the environment and property from the effects of direct threats posed by dangerous substances;

5) assessing the extent of the threat and forecasting its development;

6) liquidation, limitation or extension of the danger zone;

7) adaptation of rescue equipment and techniques to the place of occurrence and the type of dangerous substance in order to limit the effects of leakage, evaporation or emission of a dangerous substance;

8) putting dams on tanks, watercourses or reservoirs endangered by the effects of spilling dangerous substances;

9) binding or neutralization of dangerous substances;

10) protection of the area covered by leakage of a dangerous substance;

11) conducting activities in the field of initial decontamination;

12) assessment of the size of the incident.

Section 6

Rescue operations from chemical and ecological rescue, in the scope resulting from the rescue plan, are carried out by NFRS entities, including their training and equipment with specialist equipment and personal protection equipment, and in particular specialized chemical and ecological rescue teams of the State Fire Service and other entities of KSRG (National Fire and Rescue System) that are fire protection units (Republic of Poland, Regulation Of The Minister Of Internal Affairs And Administrations , 2017).

3.6. Water Law

Water law is the law governing water management. The Water Law Act is a legal regulation related to other laws regarding the protection of the environment and ecosystems as well as other regulations governing the economic and social development of the country. This is due to the fact that water is not a thing in the understanding of civil law, but a public good subject to legal protection, shaping the functioning of flora and fauna (including population). According to the discussed problem only slightly refers chemical pollution of waters, it only enumerate hazardous chemical substances, without specifying chemical munitions.

"Article 150 Initial assessment of the environmental status of marine waters

Section 1 Initial assessment of the environmental status of marine waters include:

1. analysis of basic features and properties of marine waters and the current state of the marine environment, including in particular: d) characteristics and properties of marine waters other than those mentioned in point (a) a-c, containing:

- description of the occurrence of chemical substances, including hazardous chemical substances, pollution of sediments, hot spots defined in international law regarding the protection of the marine environment of the Baltic Sea region, threats to human health and contamination of fauna and flora, in particular for human consumption,
- description of other typical or specific characteristics for the Baltic Sea region" (Republic of Poland, Water Law, 2017);

3.7. National program for the protection of marine waters - Report to the European Commission

National program for the protection of marine waters - Report to the European Commission, presents recommendation to introduce in the next cycle and to extend the monitoring work of sea waters by competent authorities within the scope of their competences, of the ammunition dumping areas identified in Polish sea areas, including warfare toxic agents. This document is reviewed every six year, and, if there is a need, updated (Republic of Poland, National Program for the Protection of Marine Waters, 2016). Despite this provision in the determination regarding extending the monitoring work of sea waters by competent authorities within the scope of their competences, of the ammunition dumping areas identified in Polish sea areas, including warfare toxic agents have not been included (Republic of Poland, Regulation Of The Minister Of The Environment, 2017).

3.8. The Act on the prevention of marine pollution by ships

The Act on the prevention of marine pollution by ships of 16 March 1995, also do not refers strictly to chemical munitions, there are only general entries on hazardous substances. Worth mentioning is fact that, this document also deals with combating marine pollution and international cooperation in this area (Republic of Poland, The Act on the prevention of marine pollution by ships, 2017).

Article 11

Section 3. Captain of a ship located in Polish sea areas who notices pollution or accident causing or capable of causing spillage of oil or other types of pollution at sea shall immediately notify the nearest shore station or Vessel Traffic Control Service, hereinafter referred to as "VTS Service", and to the ship's owner.

Section 4. Captain of a ship located in Polish sea areas:

1) involved in an accident causing a threat of pollution of the marine environment or pollution of the marine environment,
2) where the event causing the threat of pollution of the marine environment or pollution of the marine environment occurred - is obliged to immediately provide information to the nearest bank station or VTS Service and to the shipowner.

Article 21

Section 1 The director of the maritime office to which the report or report referred to in Article 11, or who receives information from another source about pollution or threat of pollution of Polish sea areas, is obliged to:

1) assess the actual situation to determine the type and degree of pollution of the sea or the threat of pollution;
2) if necessary, order and take appropriate action;
3) immediately inform the competent authorities of the other States Parties to the 1992 Helsinki Convention of the existing situation and the action taken or intended, if the displacement moves or may travel to the maritime area of these countries.

Section 2. In the event of pollution or a threat to pollution of the Polish maritime area, the director of a maritime office may order the captain to:

1) leaving the Polish sea areas by the ship;
2) reloading, rescuing a ship or carrying out necessary repairs;
3) discharging harmful substances in the right place;
4) directing the ship to a place of refuge.

Article 22

Section 1. The director of a maritime office, in order to combat pollution in Polish sea areas, may directly apply for assistance to the competent authorities of other States Parties to the 1992 Helsinki Convention, especially those that may also be affected by the effects of pollution.

Section 2. The director of the maritime office, called upon to provide assistance by the authority of another State party to the 1992 Helsinki Convention, is obliged to undertake efforts to provide such assistance.

Section 3. In the cases provided for in paragraph 1 and 2, the director of the maritime office shall notify the Helsinki Commission of the action taken.

Article 23

Section 1. The director of the maritime office who receives information about pollution in the Baltic Sea area, which may constitute a serious threat to the environment of this area or the related interests of any state party to the 1992 Helsinki Convention, after checking, shall immediately forward all relevant information to the competent state authorities, which may be endangered as a result of pollution, including information on intended or action taken, and in relation to a ship-related incident, he also forwards this information to the competent authority of the ship's Member State.

Section 2. Sending to the competent authorities of the Parties concerned of the 1992 Helsinki Convention the information referred to in *Section* . 1, shall be repeated until the notification of actions taken by these countries is received.

Section 3. If the size of the pollution justifies it, the director of the maritime office shall provide the information referred to in *Section* 1, the International Maritime Organization.

Article 23a.

Tasks in the field of combating threats and pollution at sea are performed by the Search and Rescue Service, determined by the provisions of the Act of 18 August 2011 on maritime safety.

3.9. *Council Of Ministers' Decree of 8 August 2017 on the organization of combating threats and pollution at sea*

According to this document: “the method of combating hazards and pollution related to chemical warfare dumped in Polish maritime areas is regulated by separate regulations (Article 1, section 2), (Republic of Poland, Council Of Ministers' Decree of 8 August 2017 on the organization of combating threats and pollution at sea, 2017).

3.10. Act of Environmental Protection law

The Act defines the principles of environmental protection and conditions of using its resources, taking into account the requirements of sustainable development. In legal definition, there is an explanation about the meaning of environmental protection, according to this:

“environmental protection - means either taking or abandoning actions that enable conservation or restoring natural balance; this protection consists in particular of:

a) rational shaping of the environment and management of environmental resources in accordance with the principle of sustainable development,

b) counteracting pollution,

c) restoring natural elements to the proper state;” (Article 3), (Republic of Poland, Act of Environmental Protection law, 2017)

3.11. Act on nature protection

The Act defines the objectives, principles and forms of protection of living and non-living nature and landscape. In terms of pollution of sea bottom by dumped chemical munition important may be entry relating to maintaining and restoring natural habitats and shaping proper attitudes of man towards nature, as it is written in Article 1, section 2: “The purpose of nature protection is:

1) maintaining ecological processes and stability of ecosystems;

2) preservation of biodiversity;

3) preservation of geological and paleontological heritage;

4) ensuring the continuity of the existence of plant, animal and fungal species, including their habitats, by maintaining or restoring them to a favorable conservation status;

5) protection of landscape values, green areas in cities and villages as well as shelters;

6) maintaining or restoring natural habitats as well as other resources, creatures and elements of nature to a proper conservation status;

7) shaping the right attitudes of man towards nature through education, information and promotion in the field of nature protection" (Republic of Poland, Act on nature protection, 2017).

3.12. Regulation Of The Minister Of National Defense of 21 June 2012 on safety conditions for performing underwater works in organizational units subordinated to or supervised by the Minister of National Defense

As one of the sectoral Law Regulation Of The Minister Of National Defense of 21 June 2012 on safety conditions for performing underwater works in organizational units subordinated to or supervised by the Minister of National Defense also touches the issue of behavior in case of finding dangerous objects of military origin, and enumerate works that are particular dangerous:

Article 67

Underwater works particularly dangerous are:

1) work with the use of explosives;

2) welding and thermal cutting;

3) work in chemically and biologically polluted waters;

4) works related to the penetration of the interior of wrecks.

Article 79

Finding explosive and dangerous objects of military origin or unknown origin should be notified to the duty service of the parent organizational unit (Republic of Poland, Regulation Of The Minister Of National Defense, 2017).

3.13. The Act on the general obligation to defend the Republic of Poland

The Act on the general obligation to defend the Republic of Poland indicates the role and actions of The Armed Forces in combating "natural disasters and the elimination of their consequences, anti-terrorist activities and property protection, search and rescue or protection of human health and life, cleaning and neutralization of areas of explosive and hazardous materials of origin and implementation tasks in the field of crisis management (article, 3, section 2), (Republic of Poland, The Act on the general obligation to defend the Republic of Poland, 2017).

3.14. The other documents

The other document regulating crisis management in the case of post-war chemical munitions incidents is the *"Manual of conduct in case of entrapping chemical munitions"*, published in the Official Gazette of the Gdańsk Province No. 60, (12 .12, 1997). The Council of Directors of Maritime Authorities approved the text of given above ordinances for use in sea areas of the Republic of Poland. The manual, consisting three parts, contains, in addition to the list of alarm points and the description of warfare toxic agents, basic information on how to handle chemical munitions. The analysis of the discussed document allows to state that it is already largely obsolete, and the methods of action proposed in it are too vague and not adapted to the real threats posed by contact with combat poison agents (Maritime Autorithy in Gdynia, 1997).

4. MANAGEMENT

4.1. Contingency plans and guidelines

Extremely important from the point of view of handling chemical munitions is the creation of unified action plans based on national plans in the event of fishing or dumping of CWA on beaches and the same method of utilization of deposits contaminated with CWA. During the CHEMSEA project, data on current rules of conduct in the Baltic Sea states participating in the project were collected. The partners responded to some basic questions and on the basis of the analysis, a matrix of contingency plans was prepared in individual countries (Table 2). The questions were as follows (Michalak, et al., 2012, Bełdowski, et al., 2014):

1. Are national procedures in case of CW catching / shoring already in existence?
2. Are national bodies responsible for contingency planning already designated?
3. Is the contact information for such bodies well known and widely available?
4. How are CW treated in case of accidental catching / shoring?
5. Which body initiates the response operation in case of a CW related threat?
6. Are standard forms of CW related incident documentation available?
7. Are national decontamination procedures established?
8. Do national guidelines for crew men exist and are they up-to-date?

Table 2. The matrix of the national contingency plans analyses (Bełdowski, et al., 2014)

						
1.	+	+	+	+	+	+
2.	+	+	+	+	+	+
3.	+	+	+ / –	+ / –	+	+ / –
4.	ADS	AF	AF	AF	AF	CG
5.	VTS / MRCC	MRC	MRCC	MRCC	VTS / MRCC	SMA / JRCC
6.	decentralized	decentralized	n.d.	decentralized	decentralized	n.d.
7.	deployable	deployable	n.d.	n.d.	deployable	deployable
8.	yes '90	yes '97	no	n.d.	yes '98	yes '90

n.d. – no data

ADS - Ammunition Disposal Services of Schleswig-Holstein and Mecklenburg-Western Pomerania
AF - Armed Forces' units
CG - Coast Guard
VTS - Vessel Traffic Service
MRC - Maritime Rescue Centre
JRC - Joint Rescue Centre
MRCC - Maritime Rescue Coordination Centre
JRCC - Joint Rescue Coordination Centre
SAR - The Maritime Search and Rescue Service (SAR Service)

The matrix shows how some of the Baltic states deal with chemical munition, but do not give answer how the rest of Baltic states are handling with this problem. For example, Denmark has its own service responsible for chemical emergency management. There is a chemical Division of the Danish Emergency Management Agency (DEMA), that offers expert consulting and assistance in incidents involving hazardous materials or unknown substances. This institution has a very long experience also in analyzing and handling CWA. They maintain analytical competences in identifying CWA caught by fishermen's nest in the Baltic Sea (DEMA, 2017).

The conclusions of the analysis of the collected information are as follows:

- The Baltic states are able to take action to minimize the risk posed by chemical munitions fished or dumped on the beach;
- In general, irrespective of the country-specific names, information about the event reaches the SAR services (Search and Rescue - maritime search and rescue service);
- Services responsible for minimizing the effects of incidents with chemical munitions in individual countries conduct their own accident documentation. There are no centralized state documents. Documentation is also not available for other Baltic States;
- Most countries have instructions for fishermen and people associated with the sea, but these are obsolete documents that do not take into account new operational techniques and new technologies (Michalak, et al., 2012).

Within the CHEMSEA project, models of reaction against the threat posed by accidentally recovered or shored CWL were developed, one concerning Chemical Warfare threat at sea – **The Sea Scenario**, and the second Chemical Warfare accident on the beach – **The Land Scenario** (Bełdowski, et al., 2014).

Due to the location of the incident, rescue operations in the case of throwing ammunition (barrels, containers, boxes, etc.) onto the beach (shore) require the involvement of a much greater number of forces and resources than is the case for the fishing of ammunition at sea, and thus they go and require perfect coordination of all activities. The basic assumption of the proposed solution is to minimize the time of reacting to the crisis situation, achieved through duplicated information exchange systems and perfect preparation of services and institutions responsible for responding to such events. The basis for all activities is a well-prepared crisis management plan in the event of chemical contamination of the beach (Marine Offices and some coastal municipalities interested in the results of the CHEMSEA project are just beginning to create such action plans).

The proposed scheme of action on the example of Polish and national institutions consists mainly of:

1. Receipt of information about the event (EOC / PSAP) with simultaneous gathering information about the harmed and possible decision to evacuate people or to create an immediate danger zone (contaminations).
2. Immediate notification of forces designated for response in the event of contact with chemical munitions (Police, State Fire Service, including SGR CHEM-EKO groups, Municipal Guards, Emergency Medical Services) and a request to the Provincial Military Staff for separation of specialized chemical subunits of the Polish Army.

In the next steps, all forces involved in the rescue operation should proceed to the action, according to the following scheme (Fig. 2. The model of reaction against threat posed by CWA – Land Scenario ,), (Michalak & Pączek, 2014, Fabisiak & Michalak, 2016).

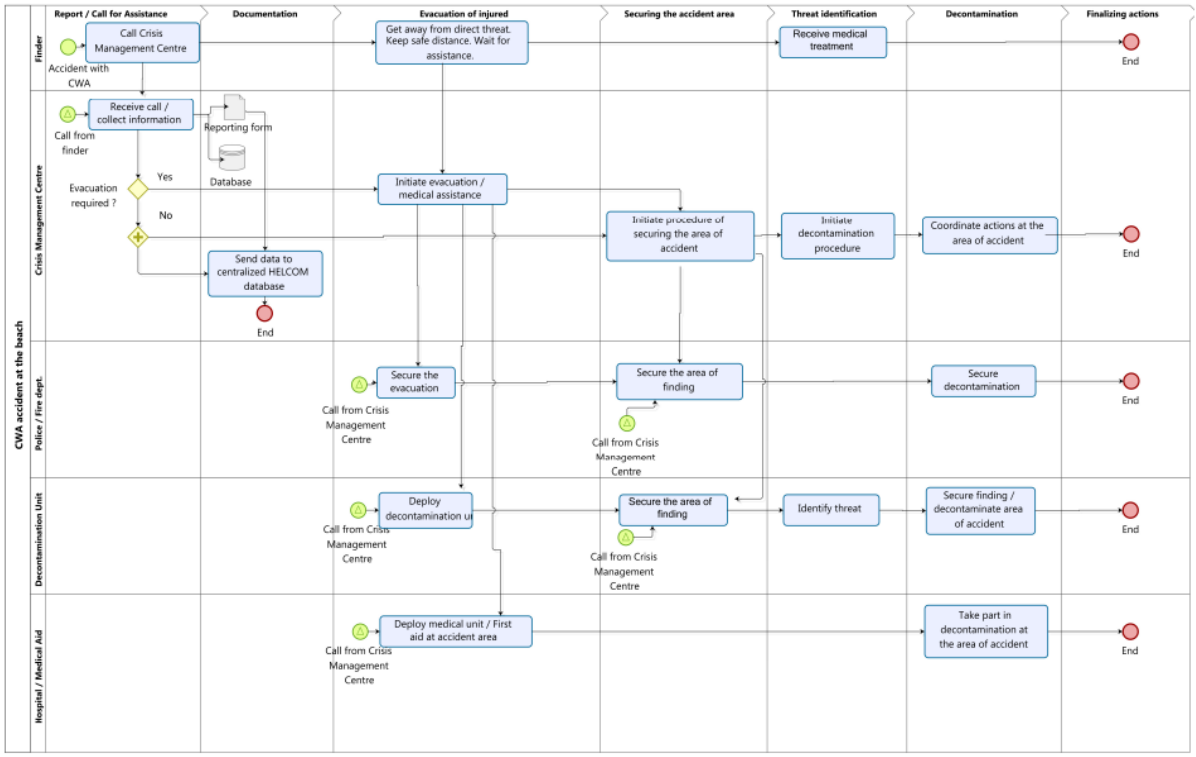


Fig. 2. The model of reaction against threat posed by CWA – Land Scenario (Michalak & Pączek, 2014), (Fabisiak & Michalak, 2016)

In the case of offshore activities, the pattern of operation is similar to that on land, while other units responsible for ensuring maritime safety are involved, such as captain of the ship, harbor master's Office, and SAR - which upon receipt information on the event takes over the coordination of rescue operations. Specialized chemical sub-units of the Armed Forces are responsible for decontamination (Fig. 3), (Michalak & Pączek, 2014, Fabisiak & Michalak, 2016).

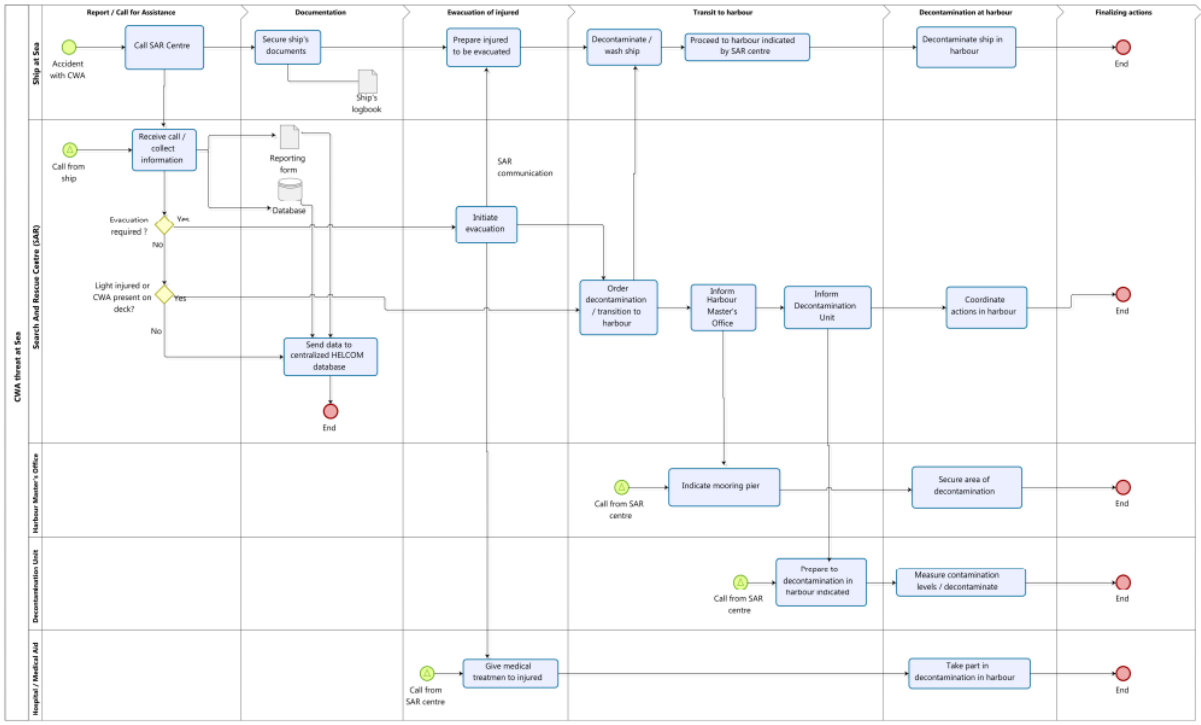


Fig. 3. The model of reaction against threat posed by CWA – Sea Scenario (Michalak & Pączek, 2014, Fabisiak & Michalak, 2016)

5. SUMMARY

The review and analysis of national legislation pointed out that in Poland there are no strictly records concerning chemical munitions and how to manage with it when it comes to contact or disposal. The exception is The National Crisis Management Plan and The Manual of conduct in case of entrapping chemical munitions given by Director of the Maritime Authority in Gdynia. This documents refers strictly to possible chemical contamination caused by post-war chemical munitions dumped in the sea in case of contact. According to the response to the interpellation of MP Adam Korol from 2016 (Korol, 2016) the problem of submerged chemical munitions requires the involvement of resources within the competence of the Minister of National Defense and the Minister of the Environment (Materna, 2016). Consequently, the Ministry of Defense issued Decision No 450/MON 25.11.2011 concerning the implementation of the CWC Convention (Republic of Poland, Decision No. 450/MON Minister Of National Defense, 2011), also there is a national Act of 22 June 2001 about execution of the CWC, where it is known that the Convention does not require recovery of the ammunition, which was dumped before 1 January 1985 (Republic of Poland, Act on the implementation of the Convention on the prohibition of the development, production, stockpiling and use of chemical weapons and on their destruction, 2018).

The issue of liquidation of the effects of fishing of sunken chemical ammunition, ie counteracting, neutralizing and education in the scope of liquidation of the effects of contamination of the Baltic Sea, eg mustard, is dealt with by the national defense department, namely the Navy with its chemical subunits. The law on direct participation of the Polish Armed Forces in saving the population and preventing the loss or damage in the area of the crisis and limiting its size is the Act of 18 April 2002 on the state of natural disaster (Journal of Laws of 2014 item 333). In addition, in order to cooperate in counteracting and responding to contamination of the Baltic Sea, agreements were concluded between the Navy Commander and the Governor of Pomerania (on November 16, 2004) and the Voivode of West Pomerania (on January 1, 2005). In addition, the monitoring of chemical weapon storage sites, monitoring of the natural environment condition as well as the nautical information system and navigational warnings serve to maintain a high level of safety.

Instructions, guidelines and emergency plans on how to deal with fishing out the chemical munitions, with the involvement of many institutions, including primarily Navy specialist services, minimize threats to the safety of shipping and the environment.

However instructions how to deal with the chemical munitions are not updated, but training on chemical weapons contamination is systematically conducted. Unfortunately, only internally within Navy without the involvement of fishermen and maritime administrations. Also in maritime administration instructions on dealing with chemical ammunition are not updated. Mentioned decree of the Maritime Authority in Gdynia is outdated - in force since 1997. It requires changes taking into account technological advances and results of research. What is more this document only covers cases of fishermen fishing for chemical munitions not including accidents on the seashore. The last guide for crews of fishing boats was issued under the CHEMSEA project by Dr. Jarosław Michalak. As gathered from the reports and information from CHEMSEA participants trainings for fishermen and people involved in maritime work were led during the project.

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