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# **VOLUNTARY OIL SPILL RESPONSE IN THE BALTIC SEA REGION**

Puruskainen Ukri-Pekka



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## ABBREVIATIONS

AIS	Automatic identification system
BRISK	Sub-regional risk of spill of oil and hazardous substances in the Baltic Sea
BSAP	Baltic Sea Action Plan
BSR	Baltic Sea Region
CCME	Central Command for Maritime Emergencies
CEDRE	Centre of Documentation, Research and Experimentation on Accidental Water Pollution
CPCP	Coastal Pollution Contingency Plan
ELF	Estonian Fund for Nature
EMSA	European Maritime Safety Agency
EU	European Union
FLAG	Fisheries Local Action Group
GOFREP	Gulf of Finland Reporting System
HELCOM	Baltic Marine Environment Protection Commission – Helsinki Commission
HNS	Hazardous and Noxious Substances
IMO	International Maritime Organization
ISPRA	Italian National Institute for Environmental Protection and Research
ITOPF	International Tanker Owners Pollution Federation
MERC	Maritime Emergency Response Centre
MRCC	Maritime Rescue Coordination Centre
MRSC/MSRC	Maritime Search and Rescue Coordination Centre
NGO	Non-Governmental Organization
OSR	Oil Spill Response
OSRV	Oil Spill Response Vessel
POLREP	Maritime Pollution Report
PSSA	Particularly Sensitive Sea Area
SPEK	Finnish National Rescue Association
SYKE	Finnish Environment Institute
VRS	Voluntary Rescue Service
WWF	World Wildlife Fund

## 1 INTRODUCTION

The countries of the Baltic Sea Region (BSR) share a common concern over the state of our unique and vulnerable sea. The urge to develop oil spill disaster preparedness is strong across the region, and several international agreements have been drawn up governing oil spill response (OSR) both at sea and along the shoreline. However, cleanup operations on contaminated shorelines are of long duration, and no authority has the human resources to run them sufficiently. Volunteer workforces could bolster the authorities in rehabilitating the environment and reducing the harm that oil causes to both people and nature, but scant attention has been given to the idea at higher levels.

Elsewhere around the world, volunteers have been involved in many cases and have proved truly helpful. However, their contribution may be ineffective or even detrimental if not managed properly. There are challenges when it comes to the management of volunteers and their collaboration with authorities. Currently there is no consistent, let alone standardised, volunteer management model for the BSR. Globally, there have been several initiatives to create a model for cooperation between competent authorities and volunteer organisations as part of OSR. In the BSR, the greatest strides appear to have been made by SPEK, and in the Mediterranean area by ISPRA and CEDRE.

In this paper, we begin by briefly reviewing the basics of OSR. The relevant information has been compiled from the materials of WWF, SPEK, ITOPF, HELCOM and EMSA. Next, we describe the concept and context of volunteering. The ITOPF report and SPEK, ISPRA and CEDRE manuals are then cited to explain the challenges of voluntary OSR and the recommended solutions to tackle them. Lastly, we briefly assess the current state of volunteering in the BSR countries, but do not pass judgement on either the countries or their authorities.

## 2 THE BALTIC SEA REGION

In the Interreg Baltic Sea Region programme, the BSR comprises eight EU member states and three partner countries. Excluding Belarus, all BSR countries have a direct coastline on the Baltic Sea or its neighbouring sea areas.



Figure 1 Baltic Sea Region (INTERREG)

The Baltic Sea is one of the world's busiest maritime waterways, with 17 major oil ports through which over 250 million tons of oil is shipped annually. The shipping activity and cross-traffic in the region continues to increase: in 2010, WWF estimated that shipping activity in the Baltic Sea would double by 2030.

Despite numerous recovery campaigns and protection programmes, the Baltic Sea has become increasingly polluted over the last three centuries. As a shallow, slowly changing brackish water pool, it is a highly vulnerable ecosystem. Contamination by hazardous and noxious substances (HNS), such as oil from spills, can worsen its state and severely harm its unique species. To make matters worse, oil recovery and destruction are especially demanding due to the sea's cold and icy conditions and dense archipelago. There are no proven effective OSR methods for extreme arctic weather and icy conditions. (WWF) Fortunately, for the Baltic Sea, this means only a few months a year. The International Maritime Organization (IMO) has designated the Baltic Sea as a Particularly Sensitive Sea Area (PSSA) which "needs special protection through action by IMO because of its significance for recognised ecological or socioeconomic or scientific reasons and which may be vulnerable to damage by international maritime activities." This allows application of the strictest possible regulation for maritime traffic and transport in the area. These regulations cover areas to be avoided, automatic identification systems (AIS), vessel traffic services (VTS), and the Gulf of Finland Reporting System (GOFREP), for example. IMO has also banned single-hulled oil tankers from the Baltic Sea.

The Baltic Sea used to face many smaller oil spills every year, such as in 2001, when there were 107. However, determined efforts towards cleaner and safer shipping have fortunately dropped the number of annual spills radically. In 2013, only six vessel accidents in the Baltic Sea led to oil spills. (WWF) In comparison with global standards, maritime traffic in the Baltic Sea can be considered responsible. However, given that it has been spared fatally large oil spill disasters, it remains to be seen how the BSR countries would react to a massive spill. None of the world's 20 biggest oil spill accidents since 1967 have occurred in the Baltic Sea. Nonetheless, the rising probability of a large spill in our shallow, icy waters due to growing vessel sizes and maritime traffic makes it incumbent upon the authorities to prepare for such an event.

The largest oil spill in the Baltic Sea occurred in 1981 outside Klaipėda, Lithuania, when the British tanker *Globe Asimi* broke in half in a storm, leaking some 16,000 tonnes of oil. The six biggest accidents since 1991 in the Baltic Sea are listed below. (Source: HELCOM)

Table 1 Largest oil spills in the Baltic Sea since 1991 (HELCOM)

Year	Name of ship	Tons of oil spilled	Location
2003	Fu Shan Hai	1,200	Bornholm, Denmark/Sweden
2001	Baltic Carrier	2,700	Kadetrenden, Denmark
1998	Nunki	100 (m <sup>3</sup> )	Kalundborg Fjord, Denmark
1995	Hual Trooper	180	The Sound, Sweden
1990	Volgoneft	1,000	Karlskrona, Sweden



### 3 OIL SPILL RESPONSE

Cleaning a seaside of spilt oil is vital, because oil is hazardous and detrimental to people and the environment. OSR starts with the observation and report of an oil spill or leakage, and is done by the oil handler responsible for the spill or a third party. The competent authority alerts the other authorities and OSR operators and organises the response work.

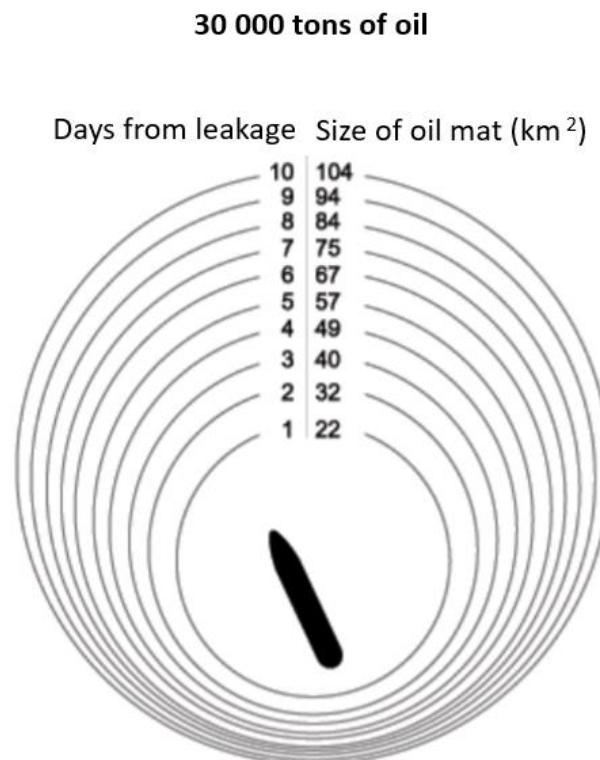


Figure 1 Spreading of an oil slick (ymparisto.fi)

There is little time to react once a leakage is observed. Depending on the type of oil, it takes from a couple of hours to a day for a slick to spread into a thin, wide layer on the water surface. During the first 24 hours, 75% of the lightest compounds evaporate or dissolve into the water; they are the most toxic and quickest to deflagrate. The spread of an oil spill can be largely predicted by situation awareness systems and the response strategy adjusted accordingly. One of these is the BORIS system, developed and maintained by Finnish Environment Institute (SYKE).

OSR can be divided roughly into two phases: open sea operation and coastal oil combat. The open sea operation consists of rescuing people from the accident area, setting up booms to stop floating oil from spreading, skimming and removing oil directly from sea and the leaking source, using dispersants, burning oil from the sea, and collecting the oil-water mixture before separating the oil from it. The booms are set according to the spreading forecast and the

sensitiveness and value of different areas. Sometimes it is necessary to sacrifice a certain sea area and direct the slick there to protect other, more important areas.

Ideally, OSR on the open sea is so quick and efficient that the whole slick can be handled, collected and destructed directly from the water. However, in almost 90% of oil accidents around the world, some oil has reached the coastline and contaminated the shore. According to WWF, generally less than 20% of the oil is collected from the source. Removing oil from the coastline is estimated to be three times more expensive than from the open sea.

Coastal oil combat includes covering the most sensitive shores before the oil spill reaches them, closing lanes and directing the oil away from the coastline if possible, clearing polluted strands and cleaning, rescuing and rehabilitating contaminated animals and wildlife. Despite advances in technology, most coastal cleaning work is done manually and can take months or even years in challenging areas. Coastal combat often involves a complex network of national and local authorities, contractors and possibly volunteers. Mainly due to the long duration and repetitive nature of the work, continuing coastal cleanup often relies on volunteers. If the response operation starts before the oil has dispersed, cleanup can be effective. In 2001, for example, following the Baltic Carrier accident, 220 cleanup workers collected an estimated 630 tons of oil from the shoreline in four days. However, the fact remains that a polluted coast will never become 100% clean.

In most countries, regulations for oil pollution prevention and response are driven by international agreements and regulations. For example, IMO adopted the MARPOL convention, perhaps the most comprehensive and important international convention, in 1973 and modified it in 1978. All the Baltic Sea countries are signatories to the MARPOL 73/78 convention.

The organisation of OSR in the BSR countries varies from centralised systems to localised responsibilities. The competent authority is the institution that coordinates the oil spill management by law. In a centralised system it is usually the federal authority that leads the response work, whereas in localised systems it is the local authorities. Common to all these arrangements is that aid and support are provided both ways between local and national authorities in the form of equipment and other resources.

A competent authority does not necessarily own or operate the OSR vessels and equipment, but it has the formal right to issue orders to the institutions that do. It also requests and provides cross-border assistance through HELCOM and other international cooperation agreements. OSR systems are developed and implemented in all BSR countries through National Pollution Contingency Plans (NPCP). In some countries, even the coastal municipalities have their own contingency plans. The scale of an oil spill disaster that the countries are preparing for varies. For example, Finland uses the scenario of 30,000 tonnes of oil leakage, Germany 15,000 tonnes, and Sweden 10,000 tonnes. (The World Maritime University)

In order to successfully combat oil spills, the authorities need special OSR equipment. OSR and cleanup equipment includes ship-sized vessels and barges, smaller oil-combating boats, booms,

skimmers and other tools and gears. Quick availability of such equipment is crucial, since oil spreads rapidly. The amount of oil one vessel can collect from the water depends on the thickness of the oil layer, weather conditions and oil type. EMSA has compiled information on available OSR vessels and other equipment, and HELCOM has a register of shore OSR equipment available for international assistance in BSR countries. The following information is from the HELCOM report Manual Co-operation in Response to Marine Pollution – Vol 3, and EMSA’s OSRV report. The main takeaway from this list is that the amount of response equipment available differs markedly between countries.

Table 2 Preparedness in the Baltic Se Region countries

<b>Country</b>	<b>Competent Authority</b>	<b>Equipment</b>
<b>Denmark</b>	Soevaernets Operative Kommando, SOK (The Royal Danish Navy)	Seven OSR vessels operated and owned by the Royal Danish Navy and three dedicated storage barges. 22 oil skimmers and five oil mop skimmers for on-shore response. Also several km of booms and several oil containers suitable for coastal oil recovery.
<b>Estonia</b>	Estonian Border Guard under the Ministry of Internal Affairs	The Estonian Police and Border Guard owns two vessels suitable for offshore OSR operations. The Estonian Maritime Administration operates two other vessels, also suitable for offshore operations. 17 oil skimmers for on-shore response. A couple of km of oil booms and anchoring equipment for coastal oil recovery. One oil container with personnel equipment meant for manual oil recovery and cleanup on the shoreline.
<b>Finland</b>	Finnish Environment Institute, SYKE	The Finnish authorities have 18 ship-sized vessels. Additionally, the Åland Islands have one vessel. All the vessels are suitable for coastal and local OSR operations, but 12 of them can also operate on the open sea. Finland also has 43 oil skimmers for coastal oil recovery, 64 workboats with recovery equipment, and tens of km of oil booms suitable for shallow and coastal waters. Also, two containers with personnel equipment, one for 100 persons and one for 25. Other tools such as oil separators, towable containers and steam boxes are available.
<b>Germany</b>	Central Command for Maritime Emergencies, CCME under the Federal Ministry of Transport, Building and Urban Development	Germany’s response equipment is the largest in the BSR, including 30 vessels. 11 of the vessels can carry out offshore operations and the remainder both coastal and local OSR. In addition, Germany has 125 oil skimmers, several km of oil booms, and tens of oil containers for coastal oil recovery. 18 boats with recovery equipment and various other equipment, such as vacuum tanks, high-pressure cleaners, power packs and water injection flanges are also available. For manual cleanup, Germany has one container with personnel cleanup equipment for 50 persons and basic hand tools.
<b>Latvia</b>	The State Environmental Service under the Ministry of Environmental Protection and Regional Development	The Latvian Coast Guard Service has two vessels suitable for offshore operation and two vessels for coastal and local operations. In addition, any vessel of the Latvian Naval Flotilla and State Border Guard can be used as an assisting vessel in OSR. Seven oil skimmers, three boats with recovery equipment and several km of oil booms are available for coastal oil recovery.

<b>Country</b>	<b>Competent Authority</b>	<b>Equipment</b>
<b>Lithuania</b>	Lithuanian Naval Force of the Ministry of National Defence	Two specialised anti-pollution vessels suitable for offshore operation, one of them operated by the Lithuanian Armed Forces. The third vessel is operated by the Lithuanian Coast Guard and is suitable for coastal operations. A small number of booms and skimmers is available in Klaipėda.
<b>Poland</b>	Ministry of Transport, Construction and Maritime Economy, Maritime Transport and Shipping Safety Department	Ten vessels suitable for offshore operations. Two of them are specialised in oil recovery and three in pollution response. The rest are search and rescue vessels. The private company Petrobaltic Co., Ltd. owns five of the vessels. Polish authorities have oil protection suits for 250 persons.
<b>Sweden</b>	Swedish Coast Guard	Eight vessels suitable for offshore OSR operations and seven vessels for coastal and local operations. All the vessels are operated by the Swedish Coast Guard. 24 oil skimmers, nine workboats with recovery equipment and roughly 1 kilometre of oil booms for coastal oil recovery, and a container of equipment for manual cleanup by 50 people.

#### 4 CROSS-BORDER COOPERATION

Even when meeting all the regulation and response capacity requirements for oil handlers, very few countries are fully capable of managing and cleaning up a large oil spill on their own. Some BSR countries still have insufficient equipment for a very large response operation, necessitating collaboration between countries sharing sea areas. Numerous agreements and contracts are in place to promote higher standards, continual improvement in environmental protection and cooperation between countries.

Next to IMO's regulations, the Helsinki Convention—or more precisely the Convention on the Protection of the Marine Environment of the Baltic Sea Area—plays a major role in the development of BSR marine environment protection. It was first signed in 1974 as an agreement to protect the Baltic Sea area environment, decrease the stress caused by N&H emissions, and maintain biodiversity. A new convention was signed in 1992 and entered into force in January 2000. HELCOM was founded to implement the convention, and it is by far the most thorough and all-encompassing institution to join the Baltic Sea effort.

All regional agreements (such as BRISK) pertaining to the subject between Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, Sweden and the EU are made within the HELCOM framework. The countries rehearse the cooperation between response vessels during the yearly Balex Delta exercises. Since the latest amendment on 1.7.2014, the Helsinki Convention has also covered the pollution response cooperation on shore. In 2010, the Balex Delta exercise included shoreline response for the first time. One of HELCOM's recommendations is that each country applies the polluter-pays principle, which simplifies the participation of third parties in the response operation. For OSR, the most relevant part of the Helsinki Convention is Article 14, Co-operation in combatting marine pollution, which states:

*“The Contracting Parties shall individually and jointly take, as set out in Annex VII, all appropriate measures to maintain adequate ability and to respond to pollution incidents in order to eliminate or minimize the consequences of these incidents to the marine environment of the Baltic Sea Area.”*

Other significant agreements regarding environmental protection and OSR in the Baltic Sea area are:

- The Copenhagen Agreement – Denmark, Iceland, Finland, Sweden and Norway agreed on mutual notification, assistance and aerial surveillance of oil and other chemicals at sea. The agreement was signed in 1971 and the latest revision is from 1993. Specific to the agreement is the use of the common Nordic languages Danish, Swedish and Norwegian.
- The Arctic Oil Spill Response Agreement – Eight arctic countries, Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the USA, agreed on cooperation on marine pollution preparedness and response in the Arctic in 2013.
- The Bonn agreement – In order to limit acute oil and chemical pollution in the North Sea, all countries bordering the North Sea have entered into an agreement on mutual notification, assistance and environmental surveillance.

- ORPC Convention – International Convention on Oil Pollution Preparedness, Response and Co-operation. Adoption on 30.11.1990 – Entry into force on 13.5.1995.
- Several bi- and/or trilateral agreements.

The EU has established its own Civil Protection Mechanism to foster cooperation among national civil protection authorities across Europe. The aim is for the disaster response to be well coordinated and unnecessary duplications of relief efforts avoided, and for assistance to meet the real need of the affected region. In the EU area there are also other conventions for marine pollution prevention and response. These are shown below.

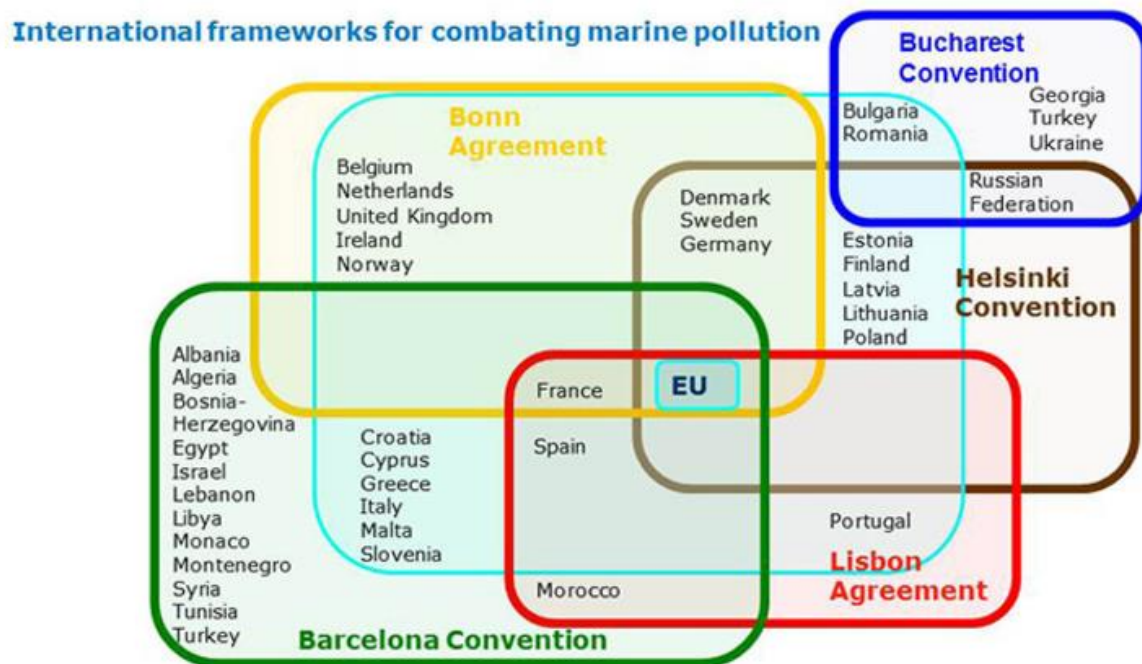


Figure 3 Marine pollution conventions (Source EU Civil Protection Mechanism)

## 5 VOLUNTEERING

*“Volunteering is any activity in which time is given freely to benefit another person, group or cause. Volunteering is part of a cluster of helping behaviors, entailing more commitment than spontaneous assistance but narrower in scope than the care provided by family and friends. Although developed somewhat independently, the study of volunteerism and social activism have much in common.” – John Wilson (2000)*

When a severe disaster, either natural or man-made, occurs, people want to help and offer themselves as volunteers. In many cases the authorities are lacking resources and capabilities to respond quickly enough so that societal and environmental damages could be avoided. Therefore, volunteers—individuals who are willing to contribute their time and effort beyond their employment and normal responsibilities—are of great help. A significant number of volunteers have participated in the response to many oil spill accidents around the world. For example, in South Korea in 2007, following the Hebei Spirit incident it was estimated that a million volunteers attended. ITOPF reviews this experience in the report *Volunteers and oil spills – a technical perspective*. The report states that volunteers are a potentially valuable and flexible workforce when managed appropriately. However, there are plenty of challenges when dealing with volunteers, and not being prepared to receive help from them can be costly and detrimental to the operation and damaging to the public relations of the authority or company responsible.

Managing volunteers is challenging. What differs them from professional responders is that they have no contracts that oblige them to work. Volunteers come from various backgrounds and possess different skills and experience. In oil spill combat they are categorised in two ways (ITOPF): 1) the extent to which they are organised, and 2) according to their expertise and capability. Volunteers are either “spontaneous” or “affiliated”. A spontaneous volunteer is an untrained person who arrives on site after an incident because of their concern for the environment. People’s willingness to help increases when the whole society faces a significant threat or disturbance. They can be local, but spontaneous volunteers commonly travel greater distances, including internationally. An affiliated volunteer in turn belongs to a recognised organisation and arrives as a member of an organised group. These recognised organisations, such as the Red Cross, WWF and Voluntary Rescue Services, often have a leadership hierarchy and structure of their own, which makes them easier to lead and assign tasks to.

In terms of expertise and training, “professionals” have relevant and transferable specialist skills such as medical, legal or IT knowledge through their profession or education. Also, some volunteers may have been trained in oil spill cleanup by their organisation or employer. The other category in this group, “unskilled” volunteers, do not have any specialist skills but are willing to offer their time and undergo training to undertake whatever tasks are assigned to them. The challenge with unskilled volunteers is that failure to adhere to safety protocols can make OSR work dangerous. Hence any volunteer participating in OSR should have a basic knowledge of the different oil types and their effects on the environment and human health. This can be addressed by brief training on site before the start of cleanup.

The extent to which volunteers are trained and given responsibility in OSR varies between countries. In Italy, ISPRA has produced a manual for managing volunteers as part of the POSOW project “to assist competent authorities and NGOs to efficiently manage volunteers’ contributions as well as brief volunteers on tasks assigned to them”. In Finland, SPEK has launched a comprehensive model for managing and organising volunteers. This includes nominating a volunteer contact person from the competent authority organisation, and a clear chain of command from the central management of that authority to an individual volunteer.

Volunteers are trained primarily for cleanup work and coastal oil spill combat, and not for open sea operations. Depending on the spreading pace of an oil slick, the competent authority usually has one to three days to summon the relevant organisation and plan for volunteers. The time naturally depends on the location of the spill, weather conditions, type and amount of oil spilled, and the effectiveness of open-sea OSR. In the Baltic Sea area, ice and the low salinity of the water further complicate the response.

### **5.1 Challenges of voluntary oil spill response**

ITOPF lists several challenges in using volunteers for OSR work. Many of them relate to the fact that volunteers are a heterogeneous group of people: they differ widely in age, skill, physical condition, health, attitude and motivation. Therefore, their ability to work in OSR and stay focused and motivated throughout requires attention from the authority organising and managing the whole operation. The ITOPF report states that in order to work and learn efficiently, volunteers need to be ready to listen, take directions and follow instructions. The challenge is making sure that each volunteer is willing to do so.

CEDRE has collected feedback from volunteers who have participated in OSR, and has listed the most common issues that interfere with satisfaction and motivation. The main findings are that volunteers must not only be allowed to work, they must also be treated with respect and given responsibilities in line with their level of skill. Indeed, ITOPF states in its report that volunteers often get disappointed with the role they are assigned if they had been expecting more influential tasks. If their contribution is not appreciated and feedback is lacking, volunteers are less likely to work for as long or as effectively as they would otherwise.

An additional challenge stems from spontaneous volunteers who arrive on site and may be difficult to control and keep count of. Tracking their comings and goings and keeping them away from areas that are not safe without protective equipment can cause problems and plenty of work for the relevant authority.

Another issue is the logistics and maintenance of numerous volunteers. As stated by ITOPF, it is difficult to predict volunteer turnout and prepare the basic infrastructure and food delivery for all of them. This stands out especially in remote areas far from larger population centres.

Some legislative and regulative points also need careful consideration. One example is reimbursements for volunteers. ISPRA’s manual suggests that the criteria and procedures for



reimbursement should be defined before a spill occurs. In Finland, SPEK has run into some controversies and unclear regulations regarding responsibilities and accounts for settling costs and damages incurred by volunteers.

## 5.2 How can volunteers be of help?

In HELCOM's manual the recommendation is that the contracting countries integrate their shoreline response into their national contingency plans. They should *"set up or integrate structures for response on the shore at appropriate levels of its existing emergency command, control and coordination structure. Besides facilitating national response operations (i.e. those carried out by one Contracting Party only), such structures facilitate international assistance between the Contracting Parties in the field of response on the shore."* Keeping in mind that on shore oil combating leans partially, sometimes heavily, on volunteers, it would definitely be of benefit if the structures and contingency plans included the use of volunteers as well. As mentioned earlier, Finland is seemingly the first country in the BSR and one of the first in the world to establish a systematic and thorough model for improving and maintaining volunteer preparedness.

The level of skill and knowledge of volunteers determines how they are able and allowed to help in OSR. Some functions, especially in open-sea operation, require special expertise and equipment. Coastal cleanup, on the other hand, involves mostly simple manual work and volunteers are commonly used to assist. However, since crude oil contains toxic, irritating and detrimental compounds that can seriously harm human health, volunteers participating in OSR work itself should possess at least a basic knowledge of the different oil types, their effects on the environment and human health, and how to handle them. Therefore, as ITOPF points out, unskilled volunteers are an issue in themselves. The less skilled they are, the higher the risk of injuries or health issues and subsequent litigation. The authorities are responsible for the safety and health of their response workers, including volunteers. In some countries, even professional oil responders undergo special training before they are considered competent to work. This raises the question of whether volunteers should be allowed to assist without any training. In 2007, following the Cosco Busan oil spill in California, all volunteers attended a 4-hour training session before being allowed onto the response site. This naturally takes time and other resources, which is not ideal in OSR. A better option would be to educate volunteers beforehand. This is something SPEK's model is trying to answer.

There are also many supportive functions that must be implemented to maintain an effective response operation, such as accommodating volunteers, providing medical services and food, and equipment maintenance. This can be done by volunteer organisations without endangering anyone's health or safety. The following sections gather the opportunities of voluntary OSR introduced by CEDRE, ISPRA, SPEK and WWF.

### **5.2.1 Observation and reconnaissance**

In Finland, for example, volunteers are used in aerial reconnaissance, as well as offshore and onshore reconnaissance, to help the authorities augment and amplify their situation awareness. Volunteers from the National Defence Training Association of Finland (MPK), orienteering clubs, scouts and guides, boating and canoeing clubs etc. can be used in onshore and offshore reconnaissance.

### **5.2.2 Oil recovery in coastal areas**

Suitable tasks for volunteers in coastal OSR include towing and connecting booms and deploying absorption materials. These aim at channelling the oil to oil-recovery units and preventing it from spreading to strands. Since oil recovery from water is mainly done using boats and other vehicles, the volunteers need to know how to use them and preferably bring their own. Thus, not all volunteers are capable of helping with OSR in coastal waters.

### **5.2.3 Coastal cleanup**

Suitable cleaning techniques depend on the amount of soiling, type of oil, and type of shoreline contaminated. Many cleanup activities can be done by non-specialised personnel such as volunteers. In France, CEDRE lists the relevant tasks on their website and provides a manual for each of them. The list includes preventive recovery of non-oiled birds and materials, manual cleanup, pumping of floating oil, mechanical oil collection, use of protection nets, use of sorbents, flooding and flushing, mechanical screening, pebble cleanup, pressure washing of rocks and man-made structures, and recovery of effluents. Among other institutions, at least WWF Finland and ISPRA have created their own operating models for individuals and teams systematically cleaning a shoreline of oil.

### **5.2.4 Animal cleanup and rehabilitation**

In the SPEK report, animal cleanup and rehabilitation involves seven different tasks: searching for oiled animals, capturing them, transporting them to a rehabilitation centre, stabilising the status of each animal, washing and drying, rehabilitating the animals after cleanup, and releasing them back into the wild. Usually it is birds that suffer the most from an oil spill. As in every oil recovery task, without proper knowledge of how to run it the results might be unpleasant, such as spreading the oil to new, uncontaminated areas, getting in the way of professional OSR, causing health issues to people, or harming animals. Veterinarians and ornithologists dedicated to the operation are required, and under their supervision volunteers who are trained to capture and treat animals correctly are able to help in many aspects of animal cleanup and rehabilitation.

### **5.2.5 Support activities**

A large cleanup operation also requires a wide range of supporting activities, such as providing the workers with food, accommodation, health care, transport and updates on the progress and forecast of the operation. The amount of administrative work also increases with the number of participating volunteers. Many of these supportive tasks can be assigned to volunteers with the relevant skills and equipment.

### **5.2.6 Models for managing volunteers**

Now that we understand the importance of preparing to manage volunteers, we look at how the authorities have approached this issue so far. As recommended by CEDRE in their manual, the roles that volunteers can undertake should be included in the coastal pollution contingency plan (CPCP). The plan should reference the most experienced NGOs in OSR and help these associations train and supervise their members and other volunteers in their desired roles.

Although globally volunteers are very familiar to the authorities from numerous oil spills in the past, of the BSR countries Finland alone seems to have a clearly documented protocol for managing OSR volunteers. SPEK has launched a model for volunteer participation in OSR which aims to make it as effortless and straightforward for the authorities as possible. Basically, the Finnish Voluntary Rescue Service (Vapepa), coordinated by Finnish Red Cross, acts as a link between the authorities and volunteers. Vapepa is a network of volunteer helpers whose main purpose is to train volunteers for rescue and emergency work and alert and call them together when they are needed. Vapepa has 52 member organisations. Some of them are national agencies of global organisations, like WWF Finland, the Guides and Scouts of Finland, and the Finnish Red Cross. Others are local NGOs with volunteer members who might have skills or equipment that is helpful in emergencies. The Finnish Taxi Owners Federation, Finnish Orienteering Federation and Finnish Divers Federation are all members of Vapepa.

Other, similar manuals for oil spill volunteer management include the Italian one by ISPRA, published within the framework of the POSOW project (Preparedness for Oil-Polluted Shoreline cleanup and Oiled Wildlife interventions) in 2013 to “assist response authorities and NGOs to make the best possible use of volunteer contributions as well as to brief volunteers on tasks assigned to them”. In France, CEDRE has its own “Management of Volunteers in Coastal Pollution Response” manual, published as part of the ARCOPOL project in 2006.

### **5.2.7 The 3<sup>rd</sup> sector in Baltic Sea Region countries**

Since an OSR operation must be realised quickly, communication between the authorities and participating organisations must be precise and fast. The alerting protocol must be rehearsed and agreed upon beforehand. Naturally, this is not as easy with spontaneous volunteers as with affiliated ones. With the former, although turnout might be massive, an organised OSR cannot really be practised and prepared proactively. Therefore, when considering voluntary OSR

possibilities, one should first assess the volunteer potential and presence of affiliated organisations in each country. Cooperating with NGOs makes it easier to tackle the challenges that ITOFF listed in its report. The share of the adult population involved in voluntary activities is relatively high in Finland, Sweden, Denmark and Germany. In Lithuania and Poland, however, it is fairly low. In all countries, however, a significant category of voluntary activities involves sport clubs. (GHK, 2009)

Following Finland's example, voluntary rescue services (VRS) are one suitable option as a 1st-tier partner for the competent authority. By nature, VRS organisations already cooperate with the authorities in areas such as search and rescue, firefighting and crisis management. Thus, it should be easier to establish a new dimension of cooperation in OSR, provided the VRS organisations have sufficient resources. Vapepa, for example, already has designated personnel, such as preparedness duty workers, oil destructors, maritime rescuers, provision rescuers and traffic controllers, which makes it an easy partner for the authorities to work with. VRS can participate in OSR drills together with the authorities and other institutions, and act as a link to other volunteer organisations. As the table below shows, almost all of the BSR countries have some sort of VRS activities.

The following table lists some of the NGOs in the BSR countries that are potentially interested in environmental conservation and OSR training and cooperation.

Table 3 NGOs in the Baltic Sea Region countries

Denmark	
1st tier	State Emergency Service Volunteer Fire and Rescue Service The Denmark Sea Rescue Group
2nd tier (global)	The Danish Scout Council WWF Friends of the Earth
2nd tier (local)	Danish Society for Nature Conservation, 1500 volunteers FLAGs
Estonia	
1st tier	Estonian Voluntary Maritime Rescue Organization
2nd tier (global)	Estonian Scout Association Friends of the Earth WWF
2nd tier (local)	Estonian Society for Nature Conservation Estonian Fund for Nature FLAGs Estonian Association of Fishery
Finland	
1st tier	The Voluntary Rescue Service
2nd tier (global)	Scouts and Guides of Finland WWF Friends of the Earth
2nd tier (local)	Finnish Association for Nature Conservation Natur och Miljö FLAGs Keep the Archipelago Tidy Association

Germany	
1st tier	Voluntary fire brigades
2nd tier (global)	Council of German Scout Associations Friends of the Earth WWF
2nd tier (local)	German Union for Nature Conservation DNR - Association for German Nature Conservation FLAGs Robin Wood BUND - Association for the Environment and Nature Conservation
Latvia	
1st tier	Voluntary firefighting organisations
2nd tier (global)	The Scout and Guide Central Organisation of Latvia Friends of the Earth
2nd tier (local)	Foundation for Environmental Education FLAGs Green Liberty Latvian Green Movement
Lithuania	
1st tier	National Defence Volunteer Forces
2nd tier (global)	Lithuanian Scouting Friends of the Earth
2nd tier (local)	Lithuanian Fund for Nature Lithuanian Green Movement FLAGs
Poland	
1st tier	Water voluntary rescue service
2nd tier (global)	Scouts and Guides of Poland WWF Friends of the Earth
2nd tier (local)	Alliance of Associations Polish Green Network FLAGs
Sweden	
1st tier	Swedish Sea Rescue Society
2nd tier (global)	Guides and Scouts of Sweden WWF Friends of the Earth
2nd tier (local)	Swedish Society for Nature Conservation FLAGs

Besides the 1st-tier partner in direct contact with the authorities, it is also necessary to involve other NGOs in the OSR model. The wider the range of organisations that offer their help and resources, the better. In the table above they are referred to as 2nd-tier partners. Within the Vapepa network, not all 2nd-tier partners seem in any way connected to nature conservation or OSR, but their expertise and equipment may be truly helpful.

As the ITOPF report states, the expertise of volunteers is an important factor when assessing their possible contribution to OSR. Hence, educating affiliated volunteers and assessing the skills of spontaneous ones is an effective way to improve the utilisation of a volunteer workforce. Commercial providers of OSR training focus mainly on educating harbour professionals, oil handlers and authorities. In Finland, WWF has its own oil spill combat project and training courses, through which they have already trained over 2000 people as OSR workers, team leaders or in other positions. In total, WWF Finland has over 8500 registered volunteers in their OSR team. The goal is to cooperate with SYKE (competent authority) immediately after an oil spill. WWF welcomes everyone aged 18-69 to their training and OSR reserves and provides the

equipment. The model has encouraged WWF to found similar projects also in Norway, Estonia (cooperation with ELF, Estonian Fund for Nature) and Russia. ITOPF is another NGO with extensive knowledge and experience of OSR work that can help optimise training procedures.

WWF has the potential to be a valuable 2nd-tier partner. Other international volunteer institutions present in all or most BSR countries are WWF, the Scouts, Friends of the Earth International (FOEI), the Red Cross and Junior Chamber International (JCI). The advantage of these organisations as partners is that once a programme has been established in one country it is easier to get it implemented in another via the global umbrella organisation.

Local volunteer organisations such as FLAGs (Fisheries Local Action Group), federations of divers, orienteers etc. and sport clubs are also welcome partners in OSR. They may have a greater interest in keeping the locality clean and know more about its characteristics. The European Environment Bureau and Coalition Clean Baltic are networks of environmental NGOs that could be useful for in the search for potential partners. The table above lists some local organisations and federations whose agenda is consistent with nature conservation and protection. However, Not all potential local NGOs are covered, since the Information may not be available on the internet. There may well be a range of suitable NGOs that are more familiar to local inhabitants than elsewhere.

## 6 SUMMARY

The need for voluntary oil spill response (OSR) is generally acknowledged, and experience using volunteers in oil combatting has been at least somewhat documented and analysed. Due to its unique characteristics, the Baltic Sea area is particularly vulnerable and therefore the efficiency of OSR in the area is especially crucial. HELCOM's recommendations and manuals are guidelines for BSR countries to improve their common preparedness. After HELCOM included coastal OSR in its manuals in 2014, the countries were asked to integrate cleanup procedures in their National Pollution Contingency Plans (NPCP) and advance international cooperation also in shoreline response. Currently, the extent of oil spill disaster for which the BSR countries are preparing varies a lot. The same is true of preparedness levels and equipment capacities. It is only logical that the requirement for improved coastal OSR would include voluntary OSR as well. No regional, let alone global, model for managing volunteers in OSR has been thoroughly implemented yet, but there are some models to benchmark. SPEK in Finland has created a model for managing volunteers effectively, and it is implemented and rehearsed by the Finnish oil spill response authorities and NGOs. Similar manuals and instructions for authorities and NGOs in the Mediterranean area have been released by CEDRE in France and ISPRA in Italy.

The contribution of volunteers can be optimised through improving their skills and knowledge about OSR, establishing management procedures for volunteer management, and involving volunteers in OSR practices and drills. WWF already offers courses for volunteers on coastal OSR, oil cleanup, oiled animal rehabilitation, and supportive tasks during a response operation. So far, among the BSR countries WWF has trained volunteers in Finland, Norway, Estonia, Sweden and Russia. This experience could be transferred to other countries to broaden the range of skilled volunteer resources in the BSR.

Not all OSR tasks are suitable for volunteers, but those that are have been listed by CEDRE, ISPRA and SPEK in their manuals. These documents also offer examples of the cooperation model between authorities and NGOs. In the Baltic Sea Area, international cooperation in OSR is rehearsed every year during the Balex Delta exercise. In the future, similar exercises could be run for voluntary OSR as well, but this would require functioning voluntary management systems at national level.

Since NGOs are not yet widely involved in OSR, it is necessary to map the 3rd sector in each country. From an Internet search, it appears that there are many environmental NGOs, both global and local, in each BSR country. However, some regionally active NGOs may not readily appear with this type of search; thus local authorities should be approached for further information. This should include what kind of resources and interests these organisations have regarding OSR, and how willing and capable they are to operate with the authorities. In addition, membership size, field of expertise and availability of equipment would be important to know when building the cooperation model for authorities and volunteers.

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HAZARD project has 15 full Partners and a total budget of 4.3 million euros. It is executed from spring 2016 till spring 2019, and is part-funded by EU's Baltic Sea Region Interreg programme.

HAZARD aims at mitigating the effects of major accidents and emergencies in major multimodal seaports in the Baltic Sea Region, all handling large volumes of cargo and/or passengers.

Port facilities are often located close to residential areas, thus potentially exposing a large number of people to the consequences of accidents. The HAZARD project deals with these concerns by bringing together Rescue Services, other authorities, logistics operators and established knowledge partners.

HAZARD enables better preparedness, coordination and communication, more efficient actions to reduce damages and loss of life in emergencies, and handling of post-emergency situations by making a number of improvements.

These include harmonization and implementation of safety and security standards and regulations, communication between key actors, the use of risk analysis methods and adoption of new technologies.

See more at: <http://blogit.utu.fi/hazard/>

