



Guidelines on minimisation of environmental damage in case of oil spills

- *The role of NGOs*
- *Access to environmental expertise*
- *Information available on environmental sensitivity*

The guidelines have been produced during the workshop:
“Minimisation of environmental damage in case of oil spills”,
22.-24. September 2005, in Bremen, Germany

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From top to bottom:

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- John Hyde, EVOSTC, Dead murrelet
- Erich Gundlach, Oiled clams, www.Oil-spill-info.com
- Erich Gundlach, EVOSTC, Oil slick approaches shore, Prince William Sound.
- Susanne Findeisen, Institut für Kreislaufwirtschaft, High pressure cleaning

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1 Preface

The guidelines base on the results of the workshop “Minimisation of environmental damage in case of oil spills”, carried out on the 22.-24. September 2005 in Bremen, Germany, which has been organised by the Institut für Kreislaufwirtschaft GmbH (Institute for Recycling and Environmental Protection) and the BLG Consult GmbH.

Twenty-two participants from 14 countries (12 Maritime Member States, Hungary and Norway) (table 1: List of participants), which have been nominated by their countries based on an invitation of the European Commission, contributed their experiences and know-how on “the role of non-governmental organisations (NGO’s)”, “information on sensitive areas” and “access to environmental expertise” during the workshop. The findings have been compiled, summarised and edited by the organisers of the event and the moderators of the workshop (table 2: Editors of the guidelines).

It must be noted that the resulting guidelines **neither represent the opinion of all participants nor the official opinion of their institutions**. The guidelines summarise the aspects, which have been identified by the individual professionals during the workshop.

Table 1: List of participants of the workshop “Minimisation of Environmental Damage in case of oil spills” (22. -24.09.2005 in Bremen, Germany) which have contributed their ideas and know-how to the development of the guidelines

Name	Institution
Mr. João Pericão de Almeida	Direcção-Geral da Autoridade Marítima, Portugal
Mr. Jaak Arro	Estonian Maritime Administration, Estonia
Ms. Kelly Attrill	Maritime & Coastguard Agency, UK
Mr. Tomasz Cepiński	Maritime Office in Slupsk, Poland
Mr. Vincent Hayes	Kerry County Council, Ireland
Mr. Hélder Limpinho	Maritime Department of Azores, Portugal
Mr. Mathieu Kahn	Préfecture maritime de la Méditerranée, France
Mr. Loic Kerambrun	CEDRE, France
Ms. Agne Kniezaite	Ministry of Environment of Republic of Lithuania, Lithuania
Mr. Tamás Kószeghy	Ministry of Environment and Water, Hungary
Commander H.C.G. Dimitrios Krioneritis	Ministry of Mercantile Marine, Greece
Ms. Ingrid Lauvrak	Norwegian Coast Directorate, Norway
Mr. Edvard Molitor	Swedish Coast Guard Headquarters, Sweden
Mr. Canice O'Sullivan	Irish Coast Guard, Ireland
Ms. Celina Pietrawska	Maritime Office in Gdynia, Poland
Mr. Marek Reszko	Maritime Search and Rescue Service, Poland
Mr. Geir Solberg	Norwegian Coast Directorate, Norway
Mr. João Sousa	Direcção-Geral da Autoridade Marítima, Portugal
Mr. Jan Tavernier	Directoraat generaal Leefmilieu, Belgium
Ms. Uda Tuente	Central Command for Maritime Emergencies, Germany
Mr. Alexander von Buxhoeveden	Swedish Coast Guard Headquarters, Sweden
Mr. Brendan Williams	Irish Coast Guard, Ireland

Table 2: Editors of the guidelines

Dipl.-Ing. Susanne Findeisen, MSc	Institut für Kreislaufwirtschaft GmbH, Bremen, Germany
Dr. rer. nat. Martin Wittmaier	Institut für Kreislaufwirtschaft GmbH, Bremen, Germany
Dr. rer. nat. Johanna Wesnigk	Environmental & Marine Project management Agency EMPA Bremen
Dr. Christopher Wooldridge	Cardiff University, United Kingdom
Capt. Karsten Brünings	BLG Consult GmbH, Germany
Dr. Lars Stemmler	BLG Consult GmbH, Germany

The workshop “Minimisation of environmental damage in case of oil spills” has been implemented in cooperation with a number of lecturers, who gave talks on a variety on relevant aspects on the topic and who provided a wide range of information and many interesting starting points for discussions. Table 3 summarises all lecturers of the workshop.

Table 2: Lecturers of the workshop “Environmental Damage in case of oil spills”

Lecturers	
Dipl. Biol. Karl-Heinz van Bernem	GKSS-Research-Centre Geesthacht, Germany
Capt. Karsten Brünings	BLG CONSULT, Germany
Dr. Christian Bussau	Greenpeace, Germany
Prof. Arvo Iital	Tallinn University of Technology, Estonia
Prof. Avraam Karagiannidis	Aristotle University of Thessaloniki, Greece
Mr. Hugo Nijkamp	Sea Alarm Foundation
Dr. Michael O’Brien	ITOPF, UK
Dipl.-Ing. Jens Rauterberg	Havariekommando, Germany (Central Command for Maritime Emergencies CCME)
Dipl.-Ing. Dirk-Uwe Spengler, MSc	State Ministry of Urban Development and Environment, City of Hamburg, Germany
Dr. rer. nat. Johanna Wesnigk	Environmental & Marine Project Management Agency EMPA Bremen
Dr. rer. nat. Martin Wittmaier	Institut für Kreislaufwirtschaft GmbH, Bremen, Germany
Dr. Christopher Wooldridge	Cardiff University, United Kingdom
Representative of the European Commission	
Mr. Aurelio Caligore	European Commission, DG Environment

Funding and disclaimer

The development of the guidelines has been co-funded by the European Commission within the framework of community cooperation against accidental or deliberate marine pollution, call for proposals 2004.

The contents of these guidelines the sole responsibility of the authors and can under no circumstances be regarded as reflecting the position of the European Union.

2 Objective and scope of the guidelines

The development of guidelines on “Minimisation of environmental damage in case of oil spills” has been initiated by the European Commission, DG Environment, within the framework of community cooperation against accidental or deliberate marine pollution, calls for proposals 2004. The European Commission has set the objective and scope of the guidelines and the workshop, during which the nominated participants have developed the basis for these guidelines.

The guidelines “Minimisation of environmental damage in case of oil spills” focus on the improvement of practical and organisational aspects,

1. The role of NGOs (Chapter 3)
2. Access to environmental expertise (Chapter 4)
3. Information available on sensitive areas (Chapter 5).

They review past experiences and lessons learnt from experts working in the field of response to oil pollution. They cover the following main aspects:

- **Identification of existing problems,**
- **Identification of solutions and best practices,**
- **The formulation of recommendations and identification of further actions.**

In addition, exclusively for the topic “Role of NGOs” the identification of **benefits and functions of the involvement of NGOs** in oil spills has been elaborated.

It is expected that the Guidelines represent a good basis for initiating further actions by the responsible authorities within the countries.

3 The role of NGOs

3.1 Background

Often NGOs appear on the scene of marine oil spills and launch activities, which reflect their particular interest, like collecting and cleaning oiled birds or focussing public attention on the perceived need for further actions. Responsible authorities are often reluctant to cooperate with NGOs as a number of problems are feared and experiences with practical cooperation are limited. Sometimes there is an element of distrust. Potential benefits of a reasonable cooperation may not be known. As a consequence the potential of NGOs and their staff is not or not fully utilised. However, this can lead to reduced chances to minimise the environmental impact of oil spills.

This chapter will give ideas, which benefits and functions NGOs can have with respect to oil spill response, what cautions should be considered and what potential solutions are available.

3.2 Definitions

Definition of NGO

NGO stands for non-governmental organisation. However there is *no common* definition for NGOs.

Literature shows that **broad** definitions of NGO often include the following criteria:

- To be not a part of the local or state or federal government, or not to be established by inter-governmental agreement
- To be free to express independent views
- To have expertise or interest in a particular subject
- To be non-profit-making.

(The term NGO technically also includes for-profit organisations (i.e. companies), however most definitions only refer to not-for-profit organisations).

According to this definition, the following groups can be defined as NGOs

- Public interest groups (e.g. Environmental groups)
- Expert groups (e.g. Association of engineers)
- Research bodies
- Private-interest business groups (e.g. Associations of chemical industry).

Narrow definitions of NGOs (e.g. from the UN) refer to:

- Voluntary citizens groups focussing on the following fields environment, development or human rights.

Because the label NGO is considered to be too broad, some NGOs prefer the term “**PVO Private volunteer Organisation**”.

Definition of volunteers

Sometimes, the terms NGOs and volunteers are mixed up in discussions. Therefore a definition of volunteers and a clear differentiation between the two groups is helpful.

Volunteers are members of staff, who are not paid for their work.

NGO and volunteers are not synonyms.

- Often many people working for NGOs are volunteers. But NGO staff also can consist of paid staff, e.g. experts or staff for administration.
- Not all volunteers belong to NGOs. For example, many private persons offer to volunteer in oil spills response, without being a member of an organisation.

3.3 Types of NGOs

A very useful classification of NGOs is based on the type of activity:

- Operational or technical NGOs, which purpose is the design and implementation of technical tasks e.g. development-related projects
- Advocacy or political NGOs, which aim to influence policy-making.

On the basis of their areal focus NGOs can be classified into:

- Local and regional acting NGOs
- National acting NGOs
- International acting NGOs.

NGOs differ with regard to their primary aims:

- Public interest groups
- Research bodies
- Expert groups
- Private-interest business groups.

Furthermore NGOs can be distinguished on the basis of their fields of activity. The main work areas of public interest NGOs refer to:

- Environment
- Development
- Human rights.

3.4 Examples of international and national NGOs

Public interest groups – Environmental interest

➤ **WWF Word Wide Fund for Nature**

<http://www.panda.org/>

WWF is an independent foundation registered under Swiss law, governed by a board of trustees under an international President. WWF operates in more than 100 countries and employs almost 4,000 people around the world. They have prioritised those areas around the world, which represent globally outstanding examples of biodiversity. In a selection of these, WWF is working with local communities, government agencies, partner NGOs and key business to implement programmes to ensure the long-term security of these very special areas. WWF get involved in oil spill response, e.g. at the Prestige incident (Volunteer activities, like bird rescue, coast watch, as well as participation in crises committee, offering expertise, etc.).

➤ **Greenpeace**

<http://www.greenpeace.org/international/>

Greenpeace is a non-profit organisation, with a presence in 40 countries across Europe, America, Asia and the Pacific. As a global organisation, Greenpeace focuses on the most crucial worldwide threats to the planet's biodiversity and environment, with campaigns on climate change, protection of ancient forests, conservation of marine environment, prevention of whaling, etc..

➤ **BirdLife International**

<http://www.birdlife.org>

BirdLife International is a global partnership of conservation organisations that strives to conserve birds, their habitats and global biodiversity. BirdLife partners operate in over one hundred countries and territories worldwide.

➤ **European Environmental Bureau**

<http://www.eeb.org>

The EEB consists of 143 member organisations (NGOs in 31 countries), dealing with environmental issues and nature protection. The EEB aims to promote knowledge and understanding of the current and future environmental and sustainable development policies of the EU amongst the general public. The EEB office in Brussels closely coordinates EU-oriented activities with EEB Members at national level around Europe. It also works in ad-hoc coalitions with representatives of other interest groups when appropriate.

➤ **European Public Health Alliance - Environment Network**

<http://www.env-health.org>

EPHA Environment Network is an international non-governmental organisation advocating greater protection of the environment as a means to improving the health and well being of European citizens. One of its key objectives is to bring health expertise to the environmental policy-making process. Member groups include NGOs specialising in public health, the environment, women's concerns and children's issues, and associations representing the health care community. These organisations operate at local, national, European and international level.

➤ **European Federation for Transport and the Environment**

<http://www.t-e.nu>

T&E is Europe's principal environmental organisation campaigning specifically on transport. Members are drawn from NGOs in nearly every European country, all of whom promote a more environmentally sound approach to transport. The federation was created in 1989 with the realisation that many political decisions that influence the environmental damage caused by transport - both positively and negatively - are taken at a European level. The T&E team currently work on campaigns including low carbon cars, cleaner shipping, aviation, health and quality of life, transport and climate change, European investment in transport infrastructure and transport pricing.

➤ **Friends of the Earth Europe**

<http://www.foeeurope.org>

Friends of the Earth Europe campaigns for sustainable and just societies and for the protection of the environment. FOEE unites more than 30 national organisations with thousands of local groups and is part of the world's largest grassroots environmental network. The organisation aims to influence European and EU policy and raise public awareness on environmental issues by providing institutions, media and the public with regular information via campaigns, publications and events. Additionally, it supports the network with representation, advice and coordination in European and EU policy making, and shares knowledge, skills, tools and resources. It wants to enable people to participate in its international campaigns through local activist groups and national organisations in more than 30 European countries.

➤ **International Friends of Nature**

<http://www.nfi.at>

With 600,000 members organised in approximately 3,500 groups, with 39 full-fledged offices and about 35,000 voluntary workers, the Friends of Nature are among the biggest non-profit and non-governmental organisations worldwide. Apart from seminars and information material they provide environmentally sound leisure-time and travel programmes for their members and run over 1,000 Nature Friends Houses in Europe and overseas. The organization focusses its activities on responsibility for sustainable development, environmentally and socially sound tourism, sustainable regional development and active environmental education. Together with member organisations and partners they organise cross-border projects, environmental campaigns and events.

➤ **International Bird Rescue Research centre**

<http://www.ibrrc.org/history.html>

With an oil spill response team of 25 wildlife experts, IBRRC has managed the oiled bird rehabilitation efforts in nearly 100 oil spills in 11 states, including the 1989 Exxon Valdez oil spill in Alaska. Their international work has taken them to seven different countries and two U.S. territories. IBRRC provides training and consultation to the petroleum industry, local, state, and federal fish and wildlife agencies, wildlife rehabilitators and researchers. Federal and state permits grant IBRRC permission to work with wild birds in captivity. IBRRC is a non-profit 501-C3 organisation that relies on the petroleum industry, fees for services, state generated response contracts, research grants, foundation grants, and individual contributions for financial support.

➤ **IFAW International Fund for Animal Welfare**

<http://www.ifaw.org/ifaw/general/default.aspx>

The International Fund for Animal Welfare works to improve animal welfare, prevent animal cruelty and abuse, protect wildlife and provide animal rescue around the world. IFAW's Emergency Relief Team rescues wild and companion animals around the world. When the tanker Prestige sank off the north-west coast of Spain in November 2002, IFAW and the International Bird Rescue Research Centre (IBRRC) brought in vets and wildlife rehabilitation experts from eight countries to help with the disaster.

➤ **Sea Alarm**

www.sea-alarmnet.org

The Sea Alarm Foundation is an international organisation established to advance and coordinate professional responses to oiled wildlife contingencies. It is an initiative by the Community of European marine wildlife rehabilitators, supported by industry and governmental interests.

➤ **BUND Bund für Umwelt- und Naturschutz Deutschland (Germany)**

<http://www.bund.net>

The German branch of Friends of the Earth, BUND, was founded in 1975 as a federation of pre-existing regional groups. BUND has its origins in the nature conservation movement. Today, the organisation is one of the most influential environmental organisations in Germany. BUND has 390,000 members and supporters. Members are active in some 2,200 local and regional groups, involved with everything from lobbying work to practical nature conservation. Internationally, BUND works on climate policy and coordinates campaigns for Friends of the Earth International. In order to promote nature conservation, BUND carries out specific, topic-based campaigns every year.

➤ **Aktionskonferenz Nordsee (Germany)**

<http://www.aknev.org>

The Aktionskonferenz Nordsee (AKN) was established in 1985 with the purpose of contributing to the development and promotion of environmentally and socially beneficial structures for the North Sea ecosystem, its coastal regions and the rivers flowing into the North Sea. The work carried out by AKN particularly serves the purpose of broadening awareness of environmental dangers and developing political pressure to eliminate the cause. Due to the fact that their activities are aimed at combating causes, including the pointing out of alternatives, the scope of their work is broadly based.

The AKN is also engaged in international efforts within the framework of the "Seas at Risk Federation" (an amalgamation of environmental protection organisation in the countries bordering the North Sea), which it cofounder in order to expand cooperation aimed at protection of the North Sea among the non-governmental organisations. "Seas at Risk" takes a critical view of the international conferences of ministers through scientific work, various actions and campaigns as well as demonstrations.

Since 1988 the AKN has also established contacts in the East European countries and has been supporting the development of international cooperation among citizens' action groups in the Baltic Sea region. AKN initiated the "Environmental Centers for Administration and Technology" (ECAT) financed by the EC and set up in St. Petersburg and Riga in 1993.

➤ **NABU Naturschutzbund Deutschland (Germany)**

<http://www.nabu.de>

The aim of NABU is the protection of biological diversity, especially in Germany, but also in other parts of the world. NABU tries to inspire people to engage themselves in the protection of nature and thus benefit the whole society.

Public interest groups – Operational

➤ **Deutsche Gesellschaft zur Rettung Schiffbrüchiger
(German Society for the rescue of the shipwrecked)**

<http://www.dgzrs.de>

The DGzRS acts as a private, independent and voluntary institution (i.e. without any governmental support). The scope of the DGzRS, as laid down by the founders of it and still valid today is to implement, to promote and to maintain an efficient maritime search and rescue (SAR) service in the coastal waters and on the high seas; to further the ideal of selfless commitment to saving human lives at sea and thereby promoting the international solidarity by human action.

➤ **Deutsches Rotes Kreuz e.V.
(German Red Cross)**

<http://www.drk.de>

The Red Cross responds immediately to conflicts and disasters around the world, providing essentials such as food, clean water, shelter and medicines. A global network of Red Cross and Red Crescent volunteers means that they are often first on the scene.

The team for technical support and safety ensures the backup of the sanitary- and care-teams.

Furthermore it is responsible for health and safety of the helping units, not only from the red cross but often observes the instructions given by law for all people at the location.

Trade associations and industry funded interest groups

➤ **International Association of Drilling Contractors**

<http://www.iadc.org/>

The IADC promotes commitment to safety, preservation of the environment and advances in drilling technology. Members are drilling contractors, producers and associates. Through conferences, training seminars and a comprehensive network of technical publications, IADC continually fosters education and communications within the upstream petroleum industry.

➤ **IPIECA International Petroleum Industry Environmental Conservation
Association**

<http://www.ipieca.org>

IPIECA is a voluntary non-profit organization whose membership includes both petroleum companies and associations at the national, regional or international levels. Separate working groups within IPIECA address global environmental and social issues related to the petroleum industry: oil spill preparedness and response, global climate change, biodiversity, social responsibility, fuel quality and vehicle emissions, and human health. IPIECA also helps members identify new global issues and assesses their potential impact on the oil industry. IPIECA holds formal United Nations status, which allows it access as a Non-Governmental Organization (NGO) to all UN negotiations. The Association represents the views

of its members in public fora and provides an interface between the petroleum industry and the United Nations Agencies.

➤ **ITOPF International Tanker Owners Federation**

<http://www.itopf.com>

The International Tanker Owners Pollution Federation (ITOPF) is a non-profit making organisation, involved in all aspects of preparing for and responding to ship-source spills of oil and chemicals in the marine environment. ITOPF's small response team is at constant readiness to assist at marine spills anywhere in the world. This service is normally undertaken on behalf of their members (tanker-owners) or associates (other ship owners) and their oil pollution insurers or at the request of governments or international agencies such as the International Oil Pollution Compensation Fund. Other services they provide include damage assessment, contingency planning, training and information. The Federation maintains an extensive library and a number of databases, and produces technical publications and videos.

➤ **INTERTANKO International Association of Independent Tanker Owners**

<http://www.intertanko.com>

INTERTANKO is committed to strengthening the position of the Independent Tanker Owners in the tanker industry in particular and in society in general. Full membership in INTERTANKO is open to independent tanker owners, owning or managing crude oil, product, chemical, OBO, O/O, gas carriers and FPSO/FSUs. Companies not in this category e.g. oil companies and state-owned companies, shipbrokers and others with a commercial interest in tanker operations and related activities can become Associate Members. INTERTANKO seeks to ensure marine safety and environmental protection, provide leadership in the development and implementation of technically sound, cost-effective regulations and industry standards.

3.5 Potential functions of NGOs

*[Ideas developed by participants of the workshop "Minimisation of environmental damage in case of oil spills", carried out on the 22.-24. September 2005 in Bremen, Germany;
Edited by the organisers and moderators of the workshop]*

Preparatory actions and proactive measures

- Providing independent expertise and information
- Raising public awareness
- Formulation of an formal or informal network of organizations
- Fund raising
- Lobbying
- Governmental Control (Contribution to enforcement and ensuring transparency)

Action in oil spill response Providing advice, expertise, information to the authorities (e.g. ecology, hydrography, ornithology, etc.)

- Provision of manpower for a particular site and/or tasks
(e.g. first aid assistance, assistance in logistics, i.e. food, transport, security, etc.)
- Focus point for and provider of volunteers
Monitoring of coastline, identifying afflicted areas/species
Identifying specific problems, asking for further action
Surveillance and independent local monitoring of crisis management (environmental or operational aspects)

3.6 Benefits of NGO involvement

[Ideas developed by participants of the workshop “Minimisation of environmental damage in case of oil spills”, carried out on the 22.-24. September 2005 in Bremen, Germany;

Edited by the organisers and moderators of the workshop]

- Provision of
 - additional expertise
 - manpower
 - resources and material
- Addition of multiple viewpoints
- Provision of local knowledge (e.g. ecosystem, infrastructure, etc.)
- Provision of voluntary free service
- Enthusiastic and committed involvement
- Potential asset for communication and PR purposes (NGOs having trust and support of the local community)
- Reduced chances of “cover-up” (due to surveillance, monitoring activities by NGOs)
- Ability and willingness to continue on-going/future management (e.g. monitoring), also long after the incident is officially closed
- The strategic involvement of NGOs can reduce conflict potentials.

3.7 Problems with the involvement of NGOs

[Ideas developed by participants of the workshop "Minimisation of environmental damage in case of oil spills", carried out on the 22.-24. September 2005 in Bremen, Germany;

Edited by the organisers and moderators of the workshop]

General Problems:

- Strong own interest of NGOs
- NGO are independent and thus non-controllable (Outside supervision could be rejected)
- Rivalry between NGOs is possible
- Diversity of NGOs: How to select the „right NGOs“ for cooperation?
- Different viewpoints of NGOs and authorities lead to risk of not reaching compromises.
- Communication problems between NGOs and authorities (“not-speaking-the-same-language”)
- Political and legal responsibility in case of accidents
- Financial compensation for (broken) materials/ equipment of NGOs
- How to include NGOs into the Contingency Plan?

Problems in NGO involvement in oil spill response:

- Health and safety aspects
- Own media message, uncontrollable PR (emotive, narrow focus)
- Untrained, inexperienced NGO staff, e.g. volunteers
- NGO staff, e.g. volunteers, require certain level of supervision (diverting resources)
- Provision of materials/ equipment for additional NGO workforce

Potential additional problems (not having been discussed during the workshop) :

- Volunteers and NGOs might add an element of risk to planning reliability

3.8 Potential solutions / Best Practices examples

[Ideas developed by participants of the workshop "Minimisation of environmental damage in case of oil spills", carried out on the 22.-24. September 2005 in Bremen, Germany;

Edited by the organisers and moderators of the workshop]

Organisational:

- Pre-planning of type and extent of involvement of NGOs (contingency planning). However, NGO integration in contingency plans should not be obligatory.
- Preparation of a database of NGOs (e.g. contacts, areas of expertise, etc.), regular updating
- Table-top training and simulation exercises involving the authorities and NGOs, to achieve mutual understanding, confidence and trust
- Health and safety plan
- Pre-contracting with NGOs (tasks, equipment, resources).
- Court actions against deliberate pollution

Procedural

- Clear definition and communication of NGO involvement (purpose and tasks)
- Information of NGOs of the contingency plan before any incident as part of the standard communication network
- Co-location of the expert committee (e.g. with NGO reps.) with the crisis committee ('door-to-door-rooms')
- Information meetings for NGO's during the crisis
- Registration, daily sign-in and sign-out
- Immediate reporting of NGO personnel incidents (health and safety procedures)

Technical:

- Training of NGOs, including health and safety
- Provision, stockpiling of additional equipment

Communication:

- Provision of communication tools, equipment to NGO staff (phones, VHF, telephone lists, etc.)
- Giving NGOs credit for their help
- Proactive media action, in cooperation with NGOs, create a good opinion and increase the credibility of the authorities

3.9 Recommendations, further actions

*[Ideas developed by participants of the workshop “Minimisation of environmental damage in case of oil spills”, carried out on the 22.-24. September 2005 in Bremen, Germany;
Edited by the organisers and moderators of the workshop]*

- Set-up a Mediterranean oil-spill workshop with emphasis on locally active NGO's.

3.10 Conclusion

A wide range of benefits can be associated with the involvement of NGOs in oil spill response. Apart from other benefits, NGOs represent a valuable resource for expertise and manpower (e.g. of volunteers) for all kinds of different tasks, in oil spill response as well as in proactive preparatory activities, which can support the authorities and professional response teams in various ways.

A number of problems have been identified ranging from practical health and safety concerns to the fear that NGOs follow their own objectives and that they are “uncontrollable”.

It can be recommended to clarify the role of NGOs in oil spill response in advance, thus identifying strategies for a reasonable cooperation specifically for each country. Most potential problems with NGO cooperation can be solved by integrating procedures on how to involve NGOs into contingency planning.

4 Information available on environmental sensitivity

4.1 Background

Environmental sensitivity mapping is widely accepted as an important tool for oil spill response. However in Europe, the scopes and approaches as well as the actual realisation of environmental sensitivity mapping range widely from country to country. Some countries have completed environmental sensitivity mapping for their whole coastline and integrated GIS-based data into the contingency plan so that they are readily available. Other countries are in the process of collecting scientific data and developing sensitivity maps. Again other countries have not started working on these tasks. As a consequence, there is as yet no standard of information available on environmental sensitivity in Europe. Therefore it is a vital task for the future to fill the information gaps. Chances should be utilised for countries to learn from experiences and to orientate new developments at already existing systems of proven utility and reliability.

Reflecting the different experiences from a wide range of countries, this chapter aims at presenting ideas regarding potential problems, solutions or best practice examples as well as recommendations with regard to information available on environmental sensitivity.

4.2 Definitions

There is no common definition of “environmental sensitivity”. However the following aspects can serve to describe “environmental sensitivity”:

- Environmental sensitivity is the vulnerability (= i.e. susceptible to injury, damage) of an environmental resources to one or more contaminants
- The definition of environmental sensitivity involves value judgements and priority
- The environmental sensitivity of habitats depends on the type, toxicity and persistence of the pollutant, physical characteristics of the habitat (e.g. shelter habitats or high energy coasts) and the susceptibilities of individual species, at various life stages, and their roles in the community.

Environmental sensitivity mapping:

- is the summary of data on the sensitivities of environmental resources in form of maps.
- is carried out to make data available for use by non-experts e.g. for planning, management and accident response
- represents the basis for decision-making, for precaution measures and for response measures (mechanical, chemical, biological or no measures) and a basis to establish a monitoring system.

4.3 Examples of publications and guidelines

The following publications shall be mentioned as examples for guidelines, which can provide a good introduction into sensitivity mapping:

➤ **IPIECA (1994): Sensitivity Mapping for oil response**

These comprehensive guidelines cover the topics:

- Map requirements
- Types of information which could be included on maps
- Obtaining and agreeing information for sensitivity maps
- Geographic information systems.

The target group for the guidelines are governments and organisations interested in improving the capability to deal with oil spills.

➤ **NOAA (U.S. National Oceanic and Atmospheric Administration) (2002):
Environmental Sensitivity Index Guidelines, Version 3.0**

The Environmental Sensitivity Index (ESI) Map concept and procedures were developed in the mid 1970's. Gundlach and Hayes (1987) first described the ESI concept of using a scale of 1 to 10 to indicate shoreline sensitivity.

These guidelines outline the basic elements of a sensitivity mapping system, guide the collection and syntheses of data, and define the data structure of a digital application using GIS technology. It covers:

- Introduction to Environmental Sensitivity Index mapping
- Components of sensitivity mapping
- Guidelines for geologists for shoreline classification
- Guidelines for resource managers
- GIS guidelines
- Map products

4.4 Information on oil sensitivity mapping in the different countries

Germany:

http://www.fg.arcadis.de/vpsweb_net_2004/vps_sensi_englisch/start.aspx

UK:

<http://www.magic.gov.uk>

Denmark:

- Greenland http://www.geus.dk/departments/quaternary-marine-geol/oliespild_v_gr/atlas.pdf

Norway: <http://www.mrdb.no/>

Poland: Not yet available. Sensitivity maps will be available as part of the national contingency plan.

4.5 Problems with information available on environmental sensitivity

[Ideas developed by participants of the workshop "Minimisation of environmental damage in case of oil spills", carried out on the 22.-24. September 2005 in Bremen, Germany;

Edited by the organisers and moderators of the workshop]

Data & Technology related issues:

- Environmental sensitivity mapping does not exist in all countries.
- Reliability of data is not always guaranteed
- Updating: may not be frequent enough
- Availability: data do not exist or are not available (property, copyright, format, sources, costs (see below))
- Transmission problems (colour print outs, large formats versus faxable, water proof versions needed)
- Relevance to questions to be solved: information overkill can happen
- Understanding and interpretation of maps not easy, different personal and scientific backgrounds matter
- Sensitivity maps use vulnerable technology, as they are mostly computer-based.

Ownership:

- Who is making the plans?
- Environmental sensitivity mapping may not be used actively by all the parties involved in oil pollution minimization, because people do not feel it is "their plan"

Costs & Effort:

- A GIS base is necessary, otherwise maps are harder to update and to use together with other data sources
- Coverage of whole coast line may be too expensive

Use related:

- Differences between assessment approaches exist because of different personal scientific backgrounds/ different interests /focusses (scientific, economic, environmental)
- Sensitivity maps may be too complicated to be used by decision makers

4.6 Potential solutions and examples for Best Practices

*[Ideas developed by participants of the workshop "Minimisation of environmental damage in case of oil spills", carried out on the 22.-24. September 2005 in Bremen, Germany;
Edited by the organisers and moderators of the workshop]*

Procedural improvements:

- Do original mapping and/or updating of environmental sensitivity maps (ESM) with participation of relevant parties involved in oil pollution minimization
- Using existing technology for sensitivity mapping
- Adapt ESM to what is really needed
- Use modern technology like GIS, but be prepared for working with printed version as well
- Start in areas with high oil pollution risk (Priority setting)

Technical improvements:

- Environmental sensitivity mapping should be done in all countries, if possible with a GIS base; or at least using digitalized information
- Updating is necessary on a regular basis, applying quality assurance
- Reliability / Relevance: sources need checking before integration
- Availability: data has to be collected (on site) or requested under a specific format
- Data should be in an exchangeable format

From Data to Information:

- Products should be ready for reading and GIS ready to be used
- Different versions for users or different possibilities for use should be available, e.g. very detailed information on biology in only in one specific version
- Ensure that work is possible independently from computer technology

Best practices from different countries

- The Norwegian database (Marine Resource Data Base, GIS-based) includes priority values (A-E) for all sensitive areas along the whole coastline (marine environment) according to a model developed by Norwegian authorities. Such prioritising is now being carried out also for terrestrial environment (by the County Governors). The results of this work are not (yet) included in the MRDB. At the very end of these reports: <http://www.sft.no/publikasjoner/vann/1835/ta1835.pdf> and <http://www.sft.no/publikasjoner/vann/1765/ta1765.pdf> , which describe the prioritising models, there is a very brief English summary which shortly describes the essence of the models.
- France: ESM exists in only 1-2 departments, GIS under development since last year (4 Departments), pilot project running as a model

- Estonia: list of internal sensitive sea areas exists (2 big islands) – preventive actions implemented to avoid transit and ship transfer of oil in the whole area, as legislative action, i.e. ban
- Estonia: ESM not high priority, map exists, only on parts, not on biotopes or communities
- Sweden: paper version exists, digital version in preparation, soon to be integrated
- Poland: Revised version of the Polish National Contingency Plan (together with ESM) is waiting for the final approval by the competent authority. The final approval is expected in the next one or two months. But ESM needs further development, with regard to seasonal diversification, more detailed information input, and user-friendly interface.

4.7 Recommendations and further actions

*[Ideas developed by participants of the workshop "Minimisation of environmental damage in case of oil spills", carried out on the 22.-24. September 2005 in Bremen, Germany;
Edited by the organisers and moderators of the workshop]*

- Quantitative prioritising of areas "in advance"
- Standardization: it is not necessary in detail, but in general helpful
- Priority should be given to areas with oil pollution risk, in making and updating the ESM
- Exchange and discussions of experts to be integrated early on into making sensitivity mapping
- European funding could help to set up a European wide exchange for developing sensitivity mapping, e.g. best practices, train-the trainers or other courses
- Making sensitivity mapping public, for example via the Internet
- Training of staff to use maps (without electricity), e.g. having printed versions available and using human experts to come to fast decisions
- Training courses for users depending on their functions
- Encourage the coordination of local, national and international sensitivity mapping – avoid duplication of information.

4.8 Conclusion

The early involvement in sensitivity mapping of all interested parties involved in oil pollution minimisation has been seen as an important issue. Maps should be actual, easy to use (also for on-site use) and based on digital information (if possible GIS). A lot of advice on data issues was given. It has been recommended, that European funding could help to set up a European wide exchange for developing sensitivity mapping (e.g. best practices, train-the-trainers or other courses).

5 Access to environmental expertise

5.1 Background

Environmental expertise is sufficiently available on most aspects relevant for oil spill response. Still, in emergency situations access to environmental expertise can represent a limiting factor, when specialised expertise needs to be locally available, within a limited time frame and under particular framework conditions.

This chapter aims at summarising problems with regard to access to environmental expertise and provides ideas for solutions and recommendations.

5.2 Definitions

Expertise can be defined as the property of a *person* (i.e. expert) or of a *system* who has specialised knowledge or skills.

Environmental Expertise covers the areas

- Natural science (e.g. Biology, Chemistry, etc.)
- Natural protection (e.g. Conservation)
- Environmental technology (e.g. Waste management).

Access to environmental expertise covers the aspects:

- Access to experts
- Access to data and information systems (i.e. Information management, information flow, etc.).

5.3 Examples of publications and guidelines

Numerous specialised articles, books, and studies and reports have been produced to provide information on environmental topics with regard to oil spills. Practice oriented guidelines and information readily applicable for oil spill contingency planning or decision-making in oil spill response are of particular importance. Here are some examples in the English language, which are readily available via internet. In addition to this, there exist a variety of operational manuals or guidelines in many Countries, in national language.

Regarding environmental effects of oil spills:

- **ITOPF: Response to Marine oil spills**
- **ITOPF: Technical Information papers**

A series of thirteen papers each covering a specific topic in a concise manner (6-8 pages) and illustrated by colour photographs and diagrams. Topics covered are: Aerial Observation of Oil at Sea, Fate of Marine Oil Spills, Oil Spill Effects on Fisheries, The Use of Chemical Dispersants to Treat Oil Spill, Use of Booms in Combating Oil Pollution, Use of Skimmers in Combating Oil Pollution, Recognition of Oil on Shorelines, Shoreline Clean-up, Disposal of Oil and Debris, Contingency Planning for Oil Spills, The Effects of Marine Oil Spills, Action: Oil Spill
- **A.J. O’Sullivan, T.G. Jaques, on behalf of the European Commission (1998): Impact Reference System (IRS)- Effects of oil in the marine Environment**

The IRS forms an integral part of the Community Information System CIS. The purpose is to enable the responsible authorities to assess quickly and with reasonable accuracy an oil spill event in terms of its actual or potential damage to marine life and biological resources. Better assessment and prediction of oil spill impacts and of the effects of counter measures, should help to improve decision-making generally, make more effective use of resources, and achieve clean-up with minimal environmental or ecological damage or disruption. The IRS can be used by non-biologists.
- **IPIECA (1991): Guidelines on biological impacts of oil Pollution**

These guidelines aim to summarize short and long-term biological effects of oil pollution and are intended to help anyone facing questions about damage assessment, prediction of possible long-term effects, or clean-up. The emphasis is on marine ecosystems, but some reference is made to other environments.
- **IPIECA (1994): Biological Impacts of oil Pollution: Saltmarshes**

Saltmarshes are among the 'most vulnerable' category of habitats. This report considers factors affecting the fate and effects of oil on saltmarshes, and provides guidelines on clean-up options. It also includes information on the ecology and uses of saltmarshes.
- **IPIECA (1996): Biological Impacts of oil Pollution: Rocky Shores**

This report describes the factors that make some rocky shores more sensitive to oil spills than others and considers the most appropriate methods of clean-up. Case histories are used to illustrate the effects of spills and spill clean-up, as well as typical recovery rates.

- **IPIECA (1997): Biological Impacts of oil Pollution: Fisheries**

The report describes the direct effects on the species, and indirect effects through impacts on their habitats. The impact on fishing gear and aquaculture facilities is also considered and information is included on basic ecology of the species concerned, and on fishing and aquaculture methods. Response to spills is discussed and reference is made to case history examples.
- **IPIECA (1999): Biological impacts of oil Pollution: Sedimentary shores**

This report describes the main types of sedimentary shores, their vulnerability to oil spill damage, clean-up after an incident, and their capacity to recover.

Examples of information on environmental considerations in oil spill response options:

- **NOAA (U.S. National Oceanic and Atmospheric Administration) (2000): Characteristic Coastal Habitats- Choosing Spill Response Alternatives**

This publication shall be a useful aid for training people who will be participating in cleanup assessment as part of an Environmental Unit within the Incident Command System. It summarises the technical rationale for selecting response methods for 5 categories of oil in specific habitats. It can help in the selection of appropriate response options to minimise the diverse environmental impacts of marine oil spills.
- **NOAA (U.S. National Oceanic and Atmospheric Administration) (2001): Characteristics of Response Strategies: A Guide for Spill Response Planning in Marine Environments**

How does on-scene coordinator or a responsible party sort through the myriad of options and select those that will effectively mitigate and clean up the oil? What is the rationale for selection? These questions are addressed in the guidelines, by providing information to decision-makers relating to tradeoff decisions for specific habitats and response options. It focuses on minimising response effectiveness while minimise resource impacts.
- **Sea Alarm Foundation (2004): Guidelines for Oiled Wildlife Response Planning**

The guidelines contain the results of a workshop that was held in Athens, Greece, 1.-2.March 2004 and include the following Chapters:

 - Response activities
 - Organisation of response
 - Human health and safety
 - Political and administrative Planning
 - Training.
- **IPIECA (2000): Choosing Spill Options to Minimize Damage: Net Environmental Benefit Analysis:**

Once oil has been spilled, urgent decisions need to be made about the options available for clean-up. The advantages and disadvantages of different responses need to be weighed up and compared both with each other and with those of natural clean-up. This process is sometimes known as 'net environmental benefit analysis'. This publication outlines the evaluation process and provides examples of clean-up options both onshore and offshore.

➤ **IPIECA (2001): Dispersants and their Role in Oil Spill Response, 2nd Edition**

This report aims to provide a balanced view about when it is productive to use dispersants and when it is not, with particular reference to environmental concerns. It uses 'real life' information from spills and from field experiments and considers the dispersant option, in relation to contingency planning.

Regarding health and safety:

➤ **IPIECA (2002): Oil Spill Responder Safety Guide**

When an oil spill occurs, the issue of Health and Safety is of critical concern, and should form the cornerstone of all oil spill preparatory measures. This task is made especially difficult during a spill, because of the vast array of tasks - each with their own Health and Safety issues, and often in conflict with each other - that need to be analysed and prioritized. This document provides a broad based guide which focuses on the practical and technical considerations during oil spill planning and response operations, including:

Examples of information on bioremediation and waste management

➤ **IPIECA (2004): Guidelines for oil spill waste minimisation and management**

The aim of this document is to highlight waste management issues related to oil spill clean-up. It outlines the sources of waste, how the waste should be collected, the storage considerations and the disposal options available. Case studies are used to demonstrate the importance of learning from past incidents. This document follows the progress of the waste through each stage as demonstrated in a waste management model.

➤ **IMO (2004): Bioremediation of marine oil spills- guidance document for Decision-making and implementation of bioremediation in marine oil spills.**

The aim of these guidelines is to provide users with clear criteria to enable them to evaluate the circumstances in which to consider the use of bioremediation for shoreline clean-up.

➤ **U.S. EPA (2001): Guidelines for the bioremediation of marine shorelines and freshwater wetlands**

The objective of this document is to present a detailed technical guidance document for use by spill responders for the bioremediation of marine shorelines and freshwater wetlands contaminated with oil and oil products. Technical personnel who are responsible for designing and operating field bioremediation processes as well as consultants and equipment manufacturers will also find it useful. This manual presents a rational approach for the design of bioremediation processes pertinent to cleanup of oil-contaminated marine shorelines and freshwater wetlands. This document evaluates current practices and state-of-the-art research results pertaining to bioremediation of hydrocarbon contamination relative to types and amounts of amendments used, frequency of application, assessment of the extent of bioremediation, sampling, and analysis. The final product is presented in a report form that is understandable by responders, on-scene coordinators, and remediation specialists. This report includes a thorough review and critique of the literature and theories pertinent to oil biodegradation, nutrient dynamics in shorelines, and analytical chemistry of oil and remediation nutrients.

www.epa.gov/oilspill/pdfs/bioremed.pdf

➤ **U.S. EPA (2004): Guidelines for the bioremediation of oil-contaminated salt marches**

The objective of this document is to present a detailed technical guideline for use by spill responders for the cleanup of coastal wetlands contaminated with oil and oil products by using one of the least intrusive approaches – bioremediation technology. This guidance document includes a thorough review and critique of the literature and theories pertinent to oil biodegradation and nutrient dynamics and provides examples of bioremediation options and case studies of oil bioremediation in coastal wetland environments. It also evaluates current practices and state-of-the-art research results pertaining to the bioremediation of hydrocarbon contamination, and presents a procedure for the design and evaluation of bioremediation processes applicable to the cleanup of oil contaminated coastal wetlands. Special attention is given to oil bioremediation of salt marshes since they are the most prevalent type of coastal wetland and have been the subject of the most extensive studies.

5.4 Problems with access to environmental expertise

*[Ideas developed by participants of the workshop “Minimisation of environmental damage in case of oil spills”, carried out on the 22.-24. September 2005 in Bremen, Germany;
Edited by the organisers and moderators of the workshop]*

Organisation

- Identification of appropriate contact: Need to specify accurately discipline and nature of assistance required
- Strategic scale required: Is global or local knowledge needed?
- Expert may not be available 24/7: Emergency situations often occur outside ‘office hours’
- Call-out arrangements may not be known: Access and contact protocols may be different between events, institutions and countries
- Requirement for relief personnel: If expert leaves home institution or base for site of incident, alternate personnel may be necessary
- Duplication of effort: Important to ensure expertise not already available within Response Team
- Accommodation and travel: Part of the logistics of the contingency plan – important for the individual concerned and for efficiency of the response over time
- Definition of expert: Important to establish status, qualifications and seniority within the command and control organization
- Time scale: For actual delivery of expertise
- Priority of expertise required: There may be a range of requests for different expertise.

Communication:

- Language: There may be international perspective or dimension to both the geography of the incident and representatives of the Response Teams
- Definitions and terminology: In addition to language itself, words and terminology have different meanings in different countries, disciplines and agencies

- Translation: has proven to be significant at critical stages of decision making at height of the incident.

Technical Issues

- Access to equipment: Refers to plant, machinery, tools, vehicles and power supplies
- Access to technology: Refers to computer hardware, software, electronic data links, specialist tools and sensors etc
- IT support: Identified as potential weakness
- Office facilities: Experts may be requested on site after main mobilization
- Lack of geo-spatial data: Often a wide range of information available but not always geo-referenced, compatible in units, scale or quality
- Interpretation of data: Potential for differences of opinion between experts
- Health, Safety and Environmental considerations (HSE): Technical aspects to protect expert who may not necessarily be familiar with risks at incident site
- New member states of EU: Cautions as to resources and support for expertise expressed.

Procedural issues

- 'Blue-light' (emergency) response: Contingency plan needs to differentiate between blue-light response and routine call out
- Response time: Speed of response of individual and information flow
- International considerations: The incident may involve trans-boundary considerations of protocol, diplomacy and control – the regime within which the expert must operate
- Harmonization of input: Expertise from a range of sources on different subjects may need to be integrated at point of decision making
- Integration of inland water, coastal and marine expertise: Some incidents may involve fresh water/inland only, or a combination with coastal and marine. Appropriate expertise will be required.

Costs

- Cost of long-term engagement: Expert from outside immediate response agencies will need to be costed into overall budget
- Fees of individual or expertise from outside agency: Special consideration may need to be given unexpected/unplanned requests
- Health, safety and environmental considerations: There are real costs to providing adequate resources.

Legislation

- Status of input or advice: Statutory or advisory?
- Liability: Responsibility for advice given?
- Insurance: Insurance of individual

- International considerations: Different legal regimes may pertain in certain circumstances
- Quality of expertise offered: On-site commander/decision maker may need to make a judgement in the event of conflicting advice being offered
- Professional accreditation: Competence and professional standing of experts involved
- Health, safety and environment: Even under the extreme conditions of a 'live' incident, compliance with all aspects of HSE will be necessary

5.5 Solutions

*[Ideas developed by participants of the workshop “Minimisation of environmental damage in case of oil spills”, carried out on the 22.-24. September 2005 in Bremen, Germany;
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Organisational and procedural issues

- Development and maintenance of a contact data base of approved experts and expertise (individuals, agencies, knowledgeable NGOs and support services) as part of standard operating procedure for contingency planning
- Confirm competence, qualification and status of all ‘players’ potentially available to contribute
- Ensure availability of all necessary, available information and data in appropriate format and media in support of expert services.
- Identify potential specialist IT (e.g. GIS) and equipment requirements in advance.
- Further support for “Permanent Environmental Group¹” concept with planning in advance and simulation training
- Build in an element on environmental expertise into contingency plan
- Develop a formally approved protocol for all aspects of expert involvement including status, confidentiality, access to press/media, communication systems on site, HSE etc.
- Clarification of roles and responsibility within formal protocols
- Manual of terms, definitions and legislation
- A clear Command and Control structure is essential for all participants
- It is possible that there may be more than one “Permanent Environmental Group” involved – harmonization and consistency of approach may be deemed desirable
- Cascade system of notification or request for additional expertise
- Table-top exercises and field-scale simulations to train and update potential contributors. Training is identified as one of the most cost effective activities in upgrading the quality of response, exchanging experience and instigating best practice
- Awareness and familiarization exercises for potential experts not used to working under operational/front line conditions (HSE -Health, Safety and Environment- as well as professional practice under pressure)
- Exercises to disseminate expertise from specialists (consultants), NGO representatives and authority professionals would add to the knowledge and the decision support system

¹ A permanent “Environment Group” or the development of a group in case of an oil spill is foreseen in some European countries. The term refers to a group of environmental experts, which provide environmental advice during oil spill response activities.

- The value of the experience of previous incidents should be recognized and made readily available for further expert interpretation when appropriate
- Recommendations for decision-making criteria and expert input especially on difficult issues through workshops and dedicated training courses in conjunction with statutory bodies and NGOs as appropriate
- Preparation of „Incident Site Access Passes“ and HSE requirements for ‘visiting’ experts in advance, if possible

Best Practice examples

- Functioning models of protocols for input from environmental experts are available in UK, France and Spain
- The POLMAR protocol in France draws on the experience of expert input from the ERIKA and PRESTIGE incidents

Further notes

- Environmental expertise can provide a useful service in support of the competent authorities and in validating interpretation or advice from other sources such as NGOs
- Funding of expert input was identified as a potentially problem area
- It was acknowledged that the ‘sell by’ date of expertise may be less than the call out period – there may be 10 years+ between major events. The database of potential contributors needs to be kept valid during the quiescent periods. In parallel, individuals and agencies need to stay in training for the unexpected.
- Response options and the associated expertise required will change with time as technology and information provision is enhanced. The legal regime may also change over the years
- The cost of environmental expertise may well be considered admissible from the Compensation Funds
- The EC has acknowledged the existence of three levels of experts: observers from other countries, national specialists, and intermediary, liaison officers. Local experts could be added to this list
- There was widespread consensus on the need for the above points to be integrated into contingency plans
- Existing best practice suggests that core members of the approved list of potential expert contributors should maintain regular contact with the Environment Group
- Several participants highlighted the need for the status or role of experts in operational management to be carefully prescribed and controlled.

5.6 Recommendations, further actions

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- Facilitation of more widespread dissemination of best practice and exchange of information between countries and on an international level
- New Member States may benefit from specific initiatives in terms of training and resources

5.7 Conclusion

The provision of specialist expertise is recognized as an important component in the armoury of response options that should be available to the team dealing with an incident. As each incident may be considered unique, the level and detail of expertise that may be required will vary depending upon the particular circumstances of nature, location and dynamics of the event. Considerations of availability, quality and cost of expertise must also take into account the legal status and qualification of the expert within the overall hierarchy of command and control. Lists of (approved) experts should be kept under periodic review and integrated into the communication web of the response team.