



**Driving** Innovation in Crisis Management for **European Resilience**

## D840.5 – Annotated catalogue on environmental impacts

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## List of Acronyms

Abbreviation / acronym	Description
BMP	Best Management Practice
CBRN	Chemical, Biological, Radiological and Nuclear
CM	Crisis management
CoU	Community of Users
DG	Directorate General
EBS	Environmental Baseline Survey
EA	Environmental Assessment
EC	European Commission
ECHO	European Commission Humanitarian Aid & Civil Protection
ECOps	Environmental Considerations during Military Operations
EERI	Environmental Emergency Risk Index
EHSA	Environmental Health Site Assessment
EIA	Environmental Impact Assessment
EMB	Environmental Management Board
EMP	Environmental Management Plan
EP	Environmental Protection
EU	European Union
FEAT	Flash Environmental Assessment Tool
FRAME	Framework for Assessing, Monitoring and Evaluating the Environment in Refugee-related Operations
GIS	Geographic Information Systems
HIT	Hazard Identification Tool
ICCPR	International Covenant on Civil and Political Rights
IMO	International Maritime Organisation
MS	Member States
NATO	North Atlantic Treaty Organization
OCHA	United Nations Office for the Coordination of Humanitarian Aid
OECD	Organisation for Economic Co-operation and Development
OPLAN	Operations Plan
REA	Rapid Environmental Assessment
RIB	Resurser och Integrerat Beslutsstöd
SOP	Standard Operating Procedures
TCN	Troop Contributing Nation
TFEU	Treaty on the Functioning of the European Union

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Abbreviation / acronym	Description
TEU	Treaty on European Union
WIS	Webbaserat InformationsSystem
WP	Work Package
UN	United Nations
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commissioner for Refugees
UN/ISDR	United Nations International Strategy for Disaster Reduction

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## Project Description

**DRIVER** evaluates emerging solutions in three key areas: civil society resilience, responder coordination as well as training and learning.

These solutions are evaluated using the DRIVER test-bed. Besides cost-effectiveness, DRIVER also considers societal impact and related regulatory frameworks and procedures. Evaluation results will be summarised in a roadmap for innovation in crisis management and societal resilience.

Finally, looking forward beyond the lifetime of the project, the benefits of DRIVER will materialize in enhanced crisis management practices, efficiency and through the DRIVER-promoted connection of existing networks.

### **DRIVER Step #1: Evaluation Framework**

- Developing test-bed infrastructure and methodology to test and evaluate novel solutions, during the project and beyond. It provides guidelines on how to plan and perform experiments, as well as a framework for evaluation.
- Analysing regulatory frameworks and procedures relevant for the implementation of DRIVER-tested solutions including standardisation.
- Developing methodology for fostering societal values and avoiding negative side-effects to society as a whole from crisis management and societal resilience solutions.

### **DRIVER Step #2: Compiling and evaluating solutions**

- Strengthening crisis communication and facilitating community engagement and self-organisation.
- Evaluating emerging solutions for professional responders with a focus on improving the coordination of the response effort.
- Benefiting professionals across borders by sharing learning solutions, lessons learned and competencies.

### **DRIVER Step #3: Large scale experiments and demonstration**

- Execution of large-scale experiments to integrate and evaluate crisis management solutions.
- Demonstrating improvements in enhanced crisis management practices and resilience through the DRIVER experiments.

DRIVER is a 54 month duration project co-funded by the European Commission Seventh Framework Programme (FP7/2007-2013) under grant agreement no. 607798.

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## Executive Summary

The objective of Task 92.3 is to generate a systematic and annotated overview of the relevant environmental laws and regulations as well as a methodology for applying this framework to the particular content of the DRIVER project.

In this report an overview and analysis of relevant environment regulations, rule sand principles is presented. The environmental instructions are subtracted from EU legislation, international conventions and declarations, international guidelines and military principles. The report identifies 27 relevant instructions, which are presented in Chapter 5. In addition, during the research for this DRIVER task some ready-made environmental crisis management tools have been identified too. The 9 relevant crisis management tools presented in this study have been developed, among others, by DRIVER partners and the United Nations.

The structure of this report is modular. Readers that are only interested in the practical application of the catalogue may start reading in Chapter 7 – use of instruction and tools. In this chapter 27 environmental crisis management instructions and 9 environmental crisis management tools are arranged according to: the DRIVER objectives and the crisis management phases. A summary of the instructions (including do's and be aware's) is included in Chapter 7 as well. A more detailed analysis of each of the instructions and tools can be consulted in Chapters 5 and 6.

Step	Analysis	Chapter	Function
	Introduction	Chapter 1	
Step 1	Context	Chapter 2	Overview
Step 1	Legal frameworks	Chapter 3	Overview
Step 2	Environmental instructions (27)	Chapter 5	Analysis
Step 2	Environmental CM tools (9)	Chapter 6	Analysis
Step 3	Use of instructions and tools	Chapter 7	Application
	Conclusions	Chapter 8	

In order to develop the annotated overview at first, an analysis of the multiway between crisis management and environmental protection is being analysed (step 1). Crisis management may have both a negative and a positive impact on the environment. The environment is in this study broadly defined, including nature, human health and the built environment. Our analysis has shown that the majority of international regulations, rules and principles with regards to environmental protection are not directly applicable to crisis management which will be further explained in the main body of this document.

The annotated catalogue derived from the above mentioned legal sources (step 2). The 27 environmental instructions are our interpretation of how environmental laws and regulations are appropriate to crisis management across all phases of the crisis management cycle, various types of crisis wherever across the world.

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The 27 environmental instructions and 9 environmental crisis management tools are made accessible in three ways (step 3). First they are linked to the three DRIVER objectives; civil society resilience, strengthened responders and learning & training (section 7.1). Second they are grouped per crisis management phase (prevention, preparedness, response and recovery) and per main actor (we made a distinction between crisis manager and policy maker) (section 7.2). Third a more detailed classification is presented according to specific crisis response activities, which is across the response, early recovery and recovery phase (section 7.3). The identified activities are:

- Fire Fighting
- Search & Rescue
- Medical Support
- Establishment of Camps/IDPs
- Food Supply
- Water Supply
- Non-Food items supply
- Debris and Waste removal
- Rehabilitation of lifelines and services (i.e. power)
- Reconstruction

A summary of the instructions and their potential application is presented in section 7.4. Per instruction is indicated where the instruction originates from, what the implied do's and be aware's of the instruction are and to which phases of the crisis management it applies.

Some general conclusions on the annotated catalogue can be made:

- Each of the 27 instructions and 9 tools is relevant for the third objective of DRIVER: learning and training;
- The majority of the 27 instruction and all 9 tools are relevant for the second DRIVER; objective (strengthened responders); exemptions are instructions that specifically address national governments 'actions';
- The first DRIVER objective (civil society resilience) is linked to about 50% of the instructions and none of the tools. In particular highly operational instructions (such as waste removal) are related to this DRIVER objective;
- The majority of the instructions and tools are relevant to every phase of crisis management (prevention, preparedness, response, recovery);
- The first 5 instructions apply to all crisis management phases and most of the DRIVER objectives. These instructions are derived from the EU founding treaties;
- In the response and recovery phases, concrete and operational instructions are in particular relevant. These are for instance instructions that are relevant for assessing the impact of a chemical accident on the environment.

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# 1 Introduction

## 1.1 Objectives of Task 92.3

This annotated catalogue in environmental impacts of crisis management (CM) is part of the Driving Innovation in Crisis Management for European Resilience (DRIVER) project of the European Union. The annotated catalogue is linked to WP92 on mitigating the negative impacts of CM. The overall objective of this WP is to develop assessment and review models in order to identify and mitigate potential negative impacts of crisis management activities and tools.

Overall objectives of WP92 (mitigating negative impacts) are formulated as follows:

- To assess the impact of DRIVER activities and outputs on: unintentionally contributing to weakening societal security, the societal cost and the environmental impacts;
- To develop and refine a set of criteria for assessing negative societal impact in regards to the environment of crisis management tools;
- To suggest measures for mitigating negative environmental impacts of crisis management in general and DRIVER's activities in particular.

Task 92.3 specifically relates to negative environmental impacts of crisis management, as specified in the DoW: **Task 92.3 on environmental impacts will 'generate a systematic and annotated overview of relevant environmental laws and regulations as well as a methodology for applying this framework to the particular content of the DRIVER project.'**

Based on this task description, this report presents relevant environmental laws, regulations and principles identified. Besides presenting a comprehensive overview of available legal sources, an overview of relevant crisis management tools which all aim to improve the environment is also presented. The analysis output is an annotated catalogue of current legal regulations and principles in a form ready to be applied to the DRIVER concepts and scenarios. To ensure that all information collected is easily understood a three-step approach has been developed:

Step	Analysis	Chapter	Function
Step 1	Context	Chapter 2	Overview
Step 1	Legal frameworks	Chapter 3	Overview
Step 2	Environmental instructions (27)	Chapter 5	Analysis
Step 2	Environmental CM tools (9)	Chapter 6	Analysis
Step 3	Use of instructions and tools	Chapter 7	Application

**Table 1: Annotated catalogue three step approach**

In step 1 an analysis is made of some relevant contextual issues (Chapter 2). Also, legal frameworks are examined (Chapter 3). With these two elements the basis for developing the catalogue has been set.

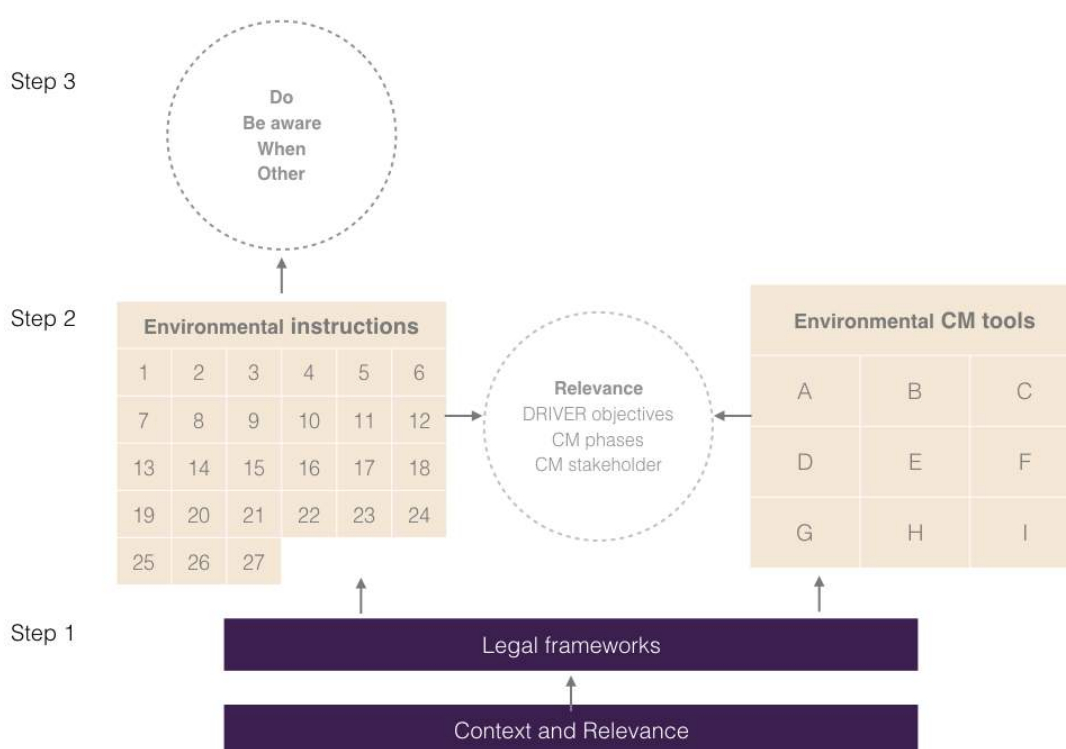
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In step 2 a detailed analysis is provided of a total of 27 relevant instructions that follow from the relevant environmental laws and regulations – including international principles and guidance (Chapter 5). In addition, the existence of ready-made environmental crisis management tools shall be taken into account too. These tools, 9 in total, are examined (Chapter 6).

Since it is the aim to develop an annotated catalogue of current legal regulations and principles that is ready to be applied to the DRIVER concepts and scenarios and CM policies and practices, the environmental instructions and the environmental CM tools are analysed and categorised according to DRIVER objectives, crisis management phases and crisis management stakeholders.

The environmental CM tools are ready made for application. In addition, the environmental instruction will be made more operational by the analysis in step 3, in which per instruction transposition into ‘do’, ‘don’t’ and ‘be aware’ is presented.

The overall analysis may be visualised as follows:



**Figure 1: Overview of Task 92.3**

Source: Ecorys (2016)

It should be noted that this report is written first and foremost for DRIVER partners involved in the DRIVER experiments. In addition, the report is written for policy makers and first responders as guidance for their work in the field of environment. The aim of this report is to provide practical support to those involved in crisis management.

There is no specific geographical coverage of the study. The annotated catalogue may be applied to the wide variety of natural and man-made crises, irrespective of the geographic location.

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## 1.2 Methodology

### Step 1

In step 1, the context (definitions) and relevant legal frameworks are collected and assessed. For definitions and scoping we built upon request of the DRIVER DOW (such as wide definition of 'environment').

#### Step 1.1 - Identification

For the identification of relevant legal frameworks (environmental rules, regulation and principles) several sources have been used. The sources used can be divided into four categories:

1. EU founding treaties;
2. EU secondary legislation;
3. International conventions and declarations, guidance and codes of conducts and
4. Military principles.

The **EU founding treaties**<sup>1</sup> contain overall environmental principles that apply at all times, irrespective if a disaster has materialised or not. These principles are in line with the general environmental principles, as described in section 3.1.

The second category of sources used is **EU secondary legislation**, e.g. regulations, directives and adopted statements. Especially secondary legislation relevant within the DRIVER context has been studied. For instance, regulation regarding flooding and chemical incidents has been included in the analysis.

**International conventions, declarations, guidance documents and codes of conduct** form the third category of information sources. In this analysis both treaties and declarations regarding environmental protection have been considered, as well as treaties and declarations used in the field of humanitarian aid. The treaties and conventions in the field of humanitarian aid can provide useful guidance in identifying relevant environmental principles. Besides treaties and declarations also guidance documents and codes of conduct have been studied.

In addition, **military principles** which can be used during and in the direct aftermath of a crisis have been included in the analysis. These principles do focus on environmental impacts in relation to crisis management activities. Concrete examples are provided which can be included within civil crisis management organisations too. It is important to note that military principles can be an important source of inspiration for the development of an annotated catalogue as they are applicable to emergency situations considering a high environmental protection level at all times.

What is not included in the scope?

As will be elaborated in Chapter 3, the EU has adopted a wide range of environmental legislation. The rules are rather technical and do not explicitly focus on crisis management. The rules aim, for

<sup>1</sup> i.e. Treaty on the European Union (TEU), Treaty on the Functioning of the European Union (TFEU) and Charter of Fundamental Rights of the European Union [22]

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instance to improve air quality or reduce noise emission. Such rules do not directly aim to reduce the risk of occurrence of a disaster.<sup>2</sup> Also most of those more technical rules will not apply during a disaster and its direct aftermath. Only the most vital (and often most broadly defined) principles elaborated in such legislation will apply in a crisis. So, when a disaster happens, the EU directives on environmental protection will not provide the required guidance. For this reason, Member State policies and crisis plans are more concrete to provide the appropriate plans before, during and after a crisis.

Another source of legislation that is not included in the scope of the analysis is Member State specific environmental legislation that might be relevant for EU crisis management. This regulation will only apply in the specific country and may very well not apply when a disaster happens. Similar to the technical EU environmental legislation, only the general principles will apply.

## Step 1.2 - Analysis

The identified rules, principles and regulations have been analysed systematically with the objective to identify concrete environmental instructions and environmental crisis management tools. The outcome of step 1.2 is an overview of 27 environmental instructions and 9 environmental crisis management tools that will be analysed in more detail and transposed into practical guidance. Instructions and tools are selected based on potential operational application in crisis management situations across the full crisis management cycle.

## Step 2

In step 2 the 27 crisis management instructions and 9 crisis management tools are analysed in detail and assessed upon their operational applicability (Chapter 5 and Chapter 6).

### Step 2.1 – Template development

A template has been developed to conduct the analysis in a structured and comprehensive way. This template is used both to analyse legal sources and crisis management tools.

The template consists of the following elements:

- Source of the legislation, principle or tool;
- Scope of application and level of binding to crisis management;
- Content of the legislation, principle or tool;
- Links with other tools, principles and regulations;
- Impact on DRIVER (specific) and crisis management in general;
  - ✓ *Expected environmental impact?*
  - ✓ *Affected environment?*
  - ✓ *Effect on crisis management*
- Influence on crisis management?
- Positive impacts and opportunities;

<sup>2</sup> However, by complying with these more technical EU rules beforehand the condition of the environment within Europe will be improved and as a result the risks of disasters may be reduced substantially.

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- Checklist for DRIVER partners;
  - ✓ Do's
  - ✓ Be aware
- More information.

Each element is discussed in more detail in Chapter 4.

## Step 2.2 – Analysis and categorisation

The 27 instructions and 9 environmental crisis management tools have been analysed in detail according to this template. The types of instructions and tools, their impacts and their application considerations, are very diverse. They may be applicable to different types of natural and man-made crises face different crises management phases and different crisis management stakeholders (some are more policy relevant, while others are more relevant in actual crisis situations). In order to bring structure to the analysis the instructions and tools have been ordered according to:

- DRIVER objectives (civil society resilience, strengthened responders, learning and training)
- Crisis management phases (prevention, preparedness, response, recovery)
- Crisis management stakeholders (policy makers, first responders)

## Step 3

The objective of Task 92.3 is to generate a catalogue which is applicable to the DRIVER project and crisis management in general. In addition to the 9 environmental CM tools as analysed under step 2, we have transposed the 27 environmental instructions into a coherent and easy accessible guidance. This guidance consists of:

- Title of the instruction
- Source and summary of the instruction
- Do's
- Be aware's
- Relevant phase of the crisis management cycle
- Categorisation (activity or principle)

Step 1, 2 and 3 have been documented in several versions of this report. The report versions have been reviewed by several reviewers: an internal review to start with, followed by a review of two DRIVER consortium members, an external review, and a final consortium review. After each of the reviews, the analytical framework, the analysis and the design of the annotated catalogue has been adapted and improved.

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## 1.3 Reading guide

The structure of this report is modular. Readers that are only interested in the practical application of the catalogue may start reading in Chapter 7 – use of instruction and tools. In this chapter 27 environmental crisis management instructions and 9 environmental crisis management tools are arranged according to: the DRIVER objectives and the crisis management phases. A summary of the instructions (including do's and be aware's) is included in Chapter 7 as well. A more detailed analysis of each of the instructions and tools can be consulted in Chapters 5 and 6.

The report is constructed according to the following analytical steps:

### Step 1 – Setting the stage

In Chapter 2 the relation between the environment and crisis management is explained and how one influences the other (both negatively and positively). In Chapter 3 the legal framework is analysed. Attention is paid to the main environmental principles. Also specific EU environmental law, which often does not apply during a crisis, is described as well as the overall legal framework of DG ECHO.

### Step 2 – Annotated catalogue

In Chapter 4 the developed template to analyse the different sources is explained. Chapter 5 presents the overview of relevant environmental crisis management instructions. Chapter 6 presents the most important tools used in crisis management.

### Step 3 – Application

In Chapter 7 the identified instructions and tools are structured according to:

- DRIVER objectives
- Phases in crisis management including specific crisis response activities
- Type of stakeholder addressed.

### Conclusions and recommendations

Chapter 8 provides an overview of the main conclusions as well as recommendations. The recommendations are a narrative of the catalogue's content.

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## Step 1: Setting the stage

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## 2 The environment and crisis management

### 2.1 Defining the environment

The objective of Task 92.3 is to focus on environmental aspects in a wide sense. We shall not only include impacts on natural environments, but also impacts on aesthetic environments, mobility within environments, built environment, and cultural environments. In other words, the request is that environmental impacts shall be defined wider than the ecological impact.

Environment often refers to the physical ecosystems, but can also be broadened to human health, the built environment or even to consideration the social dimension (quality of life):

- Natural environment (all living and non-living things);
- Physical environment (as in ecology);
- Built environment (constructed surroundings that provide the setting for human activity, ranging from the large-scale civic surroundings to the personal places).
- Knowledge environment, social practices, technological and physical arrangements intended to facilitate collaborative knowledge building, decision making, inference or discovery; and
- Social environment (the culture that an individual lives in, and the people and institutions with whom they interact).

In WP 92.3 ‘environment’ will be defined as: natural environment, built environment and population (health). Hence, ‘environmental impacts’ of crisis management will be defined as impacts on the natural environment, built environment and population (health).

Dimension	Impact on:
Natural environment	Fauna, flora, soil, water, air, climate, landscape.
Built environment	Material assets, including sites of historical significance
Population	Human health

Table 2: WP 92.3 definition of ‘environment’

It should be noted that **environmental impacts** might be caused **unintentionally** and are the unwanted and unexpected outcome of a crisis management activity. For these types of impacts a considerable number of written rules and principles exist which aim to provide guidance with regard to potential harm to the environment. These rules and principles try to create awareness amongst States, crisis managers and citizens and encourage responsibility for environmental protection.

However, the potential negative environmental impacts can also be the result of a **deliberate action** which could be absolutely necessary in crisis management. For this group, less written rules and principles are in place. For each action causing damage to the environment a trade-off should be made, weighing the benefits of saving human lives against the protection of the environment (in the broadest sense of the word). Often the outcome of this trade off will be that saving human lives is more important than saving the environment; nevertheless the action chosen should be the least

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damaging of all options that would have achieved the same result, i.e. choosing the lesser of two evils.

In additions, **positive environmental impacts or opportunities** of crisis management should be taken into account (see Section 2.4).

## 2.2 Phases in crisis management

Crisis management covers the entire cycle, from prevention to preparedness and response to recovery. In recent years, policies for disaster risk reduction and management have moved towards a more comprehensive and integrated risk approach. Within the concept of integrated risk management, the full disaster cycle – prevention, preparedness, response and recovery – should be taken into consideration in the definition of policies and approaches to disaster management. The implementation of this integrated risk management concept is currently taking place at both international and national levels and is promoted by several initiatives.

## 2.3 Relation between environment and crisis management

There is a three-way relation between (natural and man-made) crises or disasters and the environment:

1. Disasters might cause great harm to the natural and man-made environment (for example Bopal, Chernobyl). In fact crisis management - and the study of crisis management - originated with the large-scale industrial and environmental disasters in the 1980s.
2. Environmental issues or conflicts related to changes in or scarcity of the natural environment can be one of the root causes of disasters and crises. As for example Kameri-Mbote and Lind have argued that numerous crises in Africa have strong environmental underpinnings [51]. The authors have stated that: *'Targeting uses of tools and techniques to address environmental sources of conflict, can significantly improve crisis prevention and management.'*[51]. The two-way relation between disasters and the environment is depicted in the figure below.

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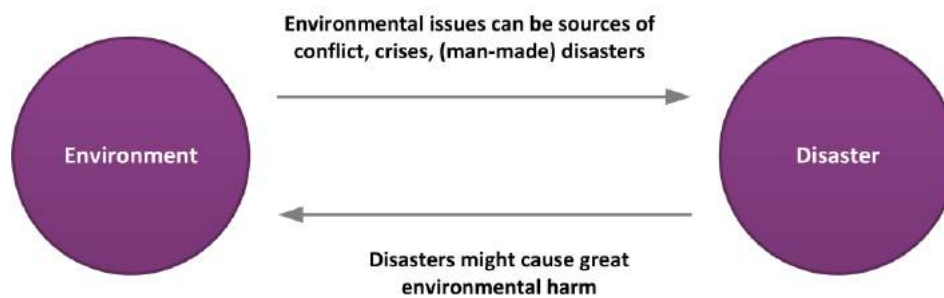


Figure 2: Two-way relation between disasters and the environment

3. Crisis management tools (response tools) might have also a negative effect on the environment (for example through the use of toxic materials to fight a fire). This is the core of WP 92.3. However effective use of disaster management might also greatly prevent or reduce environmental harm of a disaster, or even have a positive effect ('built back better').

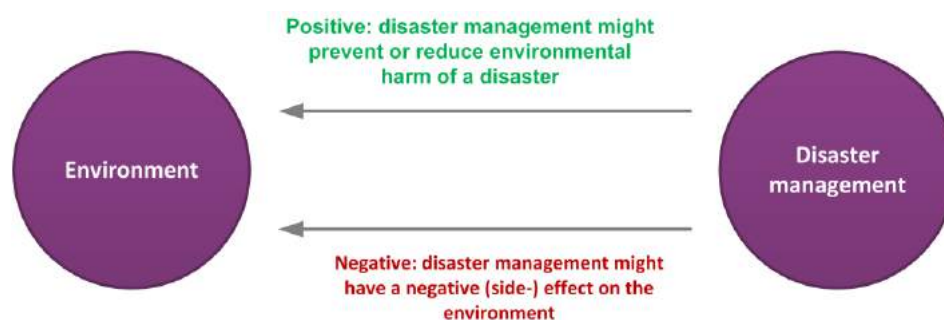


Figure 3: Positive and negative environmental effects of disaster management

Our report focuses solely on the impact of disaster management on the environment.

## 2.4 Potential environmental impacts

Before going into details on the environmental impacts of crisis management, we will first distinguish four impacts in the relationship between crisis management and the environment:

- Impact I. Impacts of the actual disaster or crisis on the environment (negative);
- Impact II. Mitigating impacts of (effective) disaster or crisis management on the environment (positive);
- Impact III. Side effects of disaster or crisis management on the environment (negative);
- Impact IV. Side effects of disaster or crisis management on the environment - through build back better approaches (positive).

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## Impact I. Crisis or disaster impacts (negative)

An overview of environmental impacts per disaster category is given in table 2 [35].

Disaster type	Environmental Impacts
Flooding	Transport of contaminated solids other than sediment.
Flooding	Flood waters contain physical items which pose a threat, including but not limited to, animal carcasses and hazardous materials.
Flooding	Polluted Water. Water contains hazardous pathogens, or chemicals.
Flooding	Erosion (water). Flood waters remove usable soil and cover usable land with sediment.
Flooding	Damage to Infrastructure (from erosion or force of flood waters). Flood waters damage or destroy built environment, limiting operation of critical functions (e.g. safe water delivery), or increasing risk of pollution (e.g. damage to sewage treatment plant)
Ice Storms	Damage to infrastructure and natural resources. Limiting access to fields and other natural resources. Heavy runoff.
Snow	Snow, including associated high winds, and ice storms (unusually heavy or persistent). Damage to infrastructure and natural resources. Limiting access to fields and other natural resources. Heavy runoff.
Hail	Damage to crops and land cover leading to loss of food supply and natural resources.
Pandemic	Human Mortality and Morbidity. This reduces social and economic activity and increases personal hardship.
Wildfire	Damage to Infrastructure. Wild fire can damage or destroy infrastructure, limiting operation of critical functions or increasing risk of pollution.
Wildfire	Air pollution. Air contains hazardous chemicals and high concentrations of particulate matter.
Wildfire	Loss of habitat. Wildfire damages or destroys habitat resulting in a negative impact on species that used the habitat before the fire.
Wildfire	Erosion (following fire). Wildfire removes land cover leading to increased erosion.
Disease	Human Mortality and Morbidity reducing social and economic activity and increasing personal hardship.
Disease	Epizootic. Mortality and morbidity of non-human animals affecting food intake, assets and increasing personal hardship.
Drought	Aeolian. Unusually dry land is more susceptible to aeolian (wind erosion)
Drought	Chemical composition of dust may exceed acceptable standards.
Drought	Drying of crops. Lack of water (from rainfall or irrigations) for normal crop development. The drying effect of wind on vegetation (failure to mature, increased likelihood of fire).
Drought	Drying of water courses and lakes/ponds. Lack of water supply for personal and commercial uses. Increase health problems. Decrease in water quality. Loss of income/food supply sources.
Earthquake	Damage to critical infrastructure, leading to (i) threat to or loss of life and injuries, or (ii) hazardous materials incidents. Changes in land forms (e.g., mass movement)
Volcano	Superheated ash, gas flows and large scale explosions resulting in the rapid destruction of the environment. Ash falls (including materials deposited following a massive explosion) and lava flows.
Volcano	Ash falls (including materials deposited following a massive explosion) and lava flows. Covering and/or destruction of productive (natural) resources, damage or destruction of built environment, pollution of water resources, health impacts from air pollution.
Technological	Hazardous material release (fixed site and during transport, including road, water, rail or air accidents). Release of chemicals or compounds that pose immediate threat to life and wellbeing.
Technological	Explosion, from fixed or mobile source (e.g., tank truck). Destruction of lives, productive assets and infrastructure.

Table 3: Environmental impacts of disaster types

## Impact II. Mitigating impacts (positive)

Mitigating impacts can be defined as measures which enable the containment of the potential negative environmental impacts (as presented in the previous table) of the disaster and crisis.

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### Impact III. Negative disaster management impacts (negative)

Examples of potential negative impacts (side-effects) of actual disaster management are presented in table 3 below [35].

Disaster management type	Environmental Impacts
Rubble Removal (Uncontrolled)	Potential to create disease vector breeding sites which could lead to increase in disease levels. Potential handling of dangerous materials (such as asbestos), requires training and PPE. If dumped in ravines or rivers will lead to flood risk.
Extinguishing Fires	Potential for human contact with hazardous chemicals, chemicals from fire fighting materials, to pollute water courses, or effect crop growth.
Deforestation	Deforestation by displaced humans using fire wood with potential for flooding, landslide, impact on long-term availability of wood supply.
Poor sanitation including latrines, solid waste management, and waste treatment and transport infrastructure.	Spread of disease potential, increased vectors pose risk to public health. Creation of hazardous waste sites. Potential pollution of water.
Poor Water Supply	Increased opportunities for disease transmission. Increase in population density. Overuse of surface and ground water supplies. Chemical use to purify water, potential for contamination of environment and human health issues.
Construction of for example camps, roads etc.	Over exploitation of natural resources. Increased risk of flooding, erosion.
Harvesting wild food	Can exceed production capacity and impact future production.

**Table 4: Environmental impacts of disaster management**

### Impact IV. Positive disaster management impacts ('build-back-better')

Examples of Build Back better opportunities are presented in the box below [35].

#### Build-back-better effects (positive)

##### Positive environmental impacts and opportunities through build back better are:

- Improved Health – Pollution clean-up and collection projects lead to a healthier recovery environment for disaster affected communities
- Sustainable Livelihoods – Cash-for-Work projects for debris removal lead to reuse and recycling small scale businesses to produce a recycled product for sale into the reconstruction works
- Long term improved natural resources management – Increased recycling reduces the burden on natural resources and raises awareness of finite natural resources
- Improved environmental management – Governance support leads to stronger environmental laws and practice for a more resilient environmental management

Our conceptual model is depicted in figure A, B and C. Disasters and crisis may have a (large) negative impact on the environment (natural environment, built environment, human health). This is presented in figure A. Proper disaster management is aimed at preventing or responding to a (potential) crisis or disaster. As a result the negative environmental impacts may be (greatly) limited. This is what we will call the mitigating effect (or environmental benefit) of disaster management (Figure B). However, there might be negative impacts of the use of disaster management tools. This is what we will call the negative 'tool effect' (or environmental cost) of disaster management (Figure C).

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Figure A. Potential impact on the environment:

*Without disaster management*

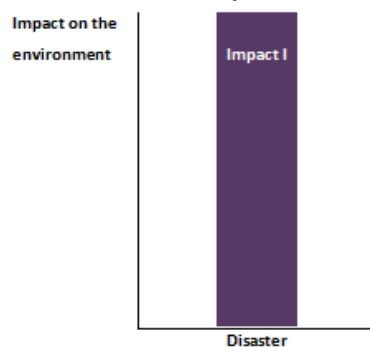


Figure B. Actual impact on the environment:

*With disaster management*

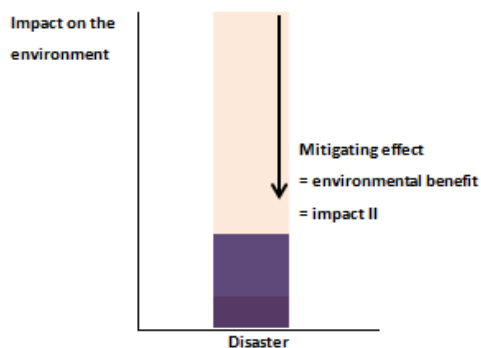
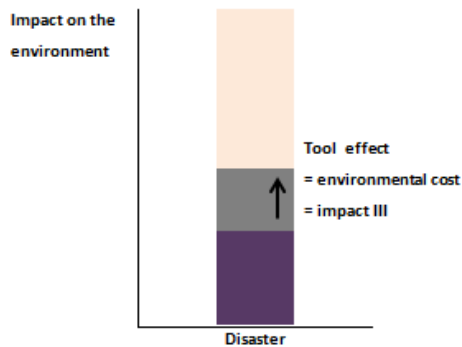


Figure C. Actual impact on the environment:

*With disaster management*

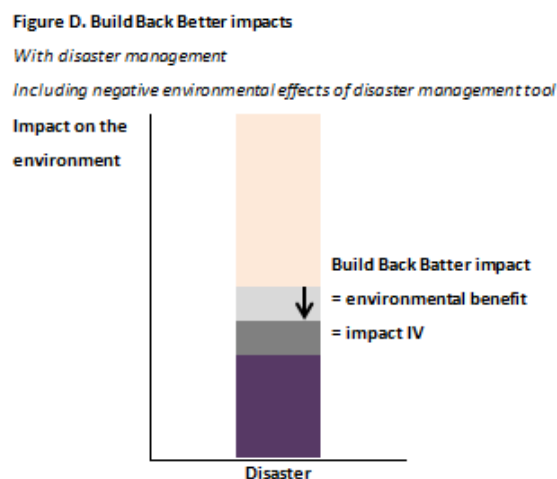
*Including negative environmental effects of disaster management tool*



Source: Ecorys (2016)

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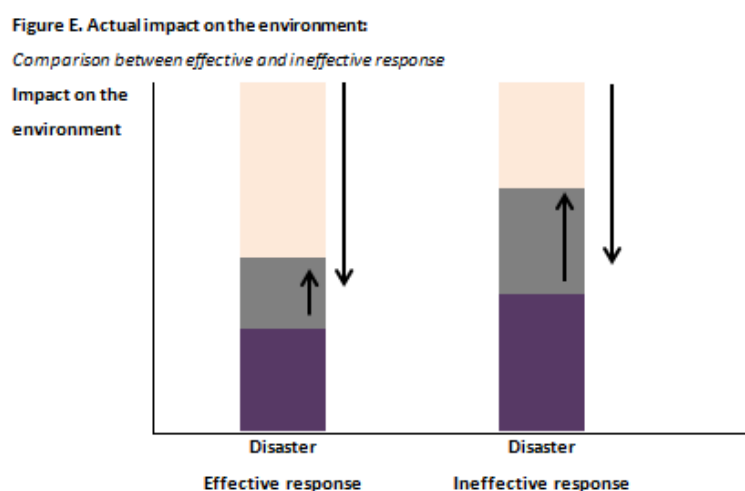




Source: Ecorys (2016)

For a variety of reasons, the negative environmental effects of disaster management tools and techniques cannot be assessed in isolation. In many cases environmental benefits will outweigh the environmental costs of the tools that are being used (figure A, B, C and D). The effects might also depend on the manner in which tools are being used (for example depending on professionalism of disaster management organisations). Ineffective use will reduce the mitigating effects and increase the negative disaster management tool effects (see figure E).

Tools won't be used in isolation, and thus cannot be assessed in isolation. Often it is a combination of tools or tools and systems that will provide the solution. Another question is of technical nature: how do we assess (quantify) the environmental impacts. There are many – partly overlapping – methodologies for implementing environmental impact assessments, which requires highly specialist expertise.



Source: Ecorys (2016)

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## 3 Legal frameworks

This chapter focuses on three topics:

- Principles of environmental law
- Specific European environmental regulation
- European legal framework for civil protection.

The first section describes the general principles of environmental law. These principles form the basis for all environment related law. Therefore, they can be found in both international and EU law. Although the basic principles are not always explicitly laid down, they will always play an important role in all human activities and hence should be considered at all times. Therefore, they also play a vital role in crisis management activities.

The second section provides an overview of environmental legislation that is adopted in the European Union, which will not however directly apply during a crisis. Therefore, the legislation is less relevant for crisis management, although crisis management activities, especially the ones in the prevention and preparedness phase might be affected in a general manner by these rules and principles.

The chapter concludes with a description of the DG ECHO framework. This DG is responsible for humanitarian aid provided, both in and outside the EU. Most crisis management activities, especially the activities conducted in the response and recovery phase, are based on this legal framework. However, the legal framework does not provide guidance on environmental impacts resulting from crisis management related activities.

### 3.1 Principles of (European) environmental law

Environmental law, whether it is adopted at an international, European or national level is in general based on four principles. [49] These principles together try to ensure that the environment is sufficiently protected, not only for the current generation, but also for future ones. The main principles of environmental law are:

- Sustainable development;
- Inter-generational and intra-generational equity;
- The precautionary principle;
- The polluter pays principle.

These four principles will be discussed in more detail below as they form the core of all environmental related activities and they will play a role in all phases of the crisis management cycle.

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## Sustainable development

The first principle is the principle of sustainable development. What sustainable development exactly means is not uniformly defined and the term therefore can mean something different in each and every piece of legislation. However, all definitions used contain similar elements. The most commonly used definition is the definition adopted by the Brundtland Commission on Environment and Development in 1987 [47] which indicates that: *'sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'*<sup>3</sup>

This definition has been used in several major internationally adopted declarations and statements. On a UN level the sustainable development is extensively laid down in the Rio Declaration on Environment and Development [18] which was adopted in 1992. Principle 1 of Declaration indicates that *'human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.'*<sup>4</sup> Based on this principle States need to ensure that at least the people living in their own jurisdiction can live their lives in harmony with nature. More specifically, that they are not unnecessarily exposed to natural or man-made disasters. The first principle of the Rio Declaration contains a fundamental right for each human being.

In addition to principle 1, principle 8 of the Rio declaration indicates that States, in order to achieve sustainable development should, amongst others, reduce and eliminate unsustainable patterns of production and consumption. By closely following these two principles (the first and eight) the risk on a disaster can be reduced, as the environment is less affected by human productivity. As a result the risk on a disaster can be reduced and also the environmental damage can be reduced.

## Inter-Generational and Intra-Generational Equity

The second principle, which is closely linked to the first one, is the principle of inter-generational and intra-generational equity. Inter-generational equity refers to such a use of the environment by the current generation which enables future generations to enjoy the environment and natural resources in a similar way as the current generation does [49]. For example, future generations should be able to consume similar goods and live in a similar and preferably even better environment. A very concrete example relates to the discussion of tropical rainforests. Based on the inter-generational principle, future generations have the right to enjoy the tropical rainforests as well. Therefore, the current generation has the obligation to ensure that future generations can enjoy the rain forest as well.

The second part, intra-generational equity, refers to an equal right to all people of the current generation to enjoy the environment in a similar way. More strictly said it relates to the right of all people within the current generation to fair access to the Earth's natural resources. This also means that developing countries have the same rights to natural resources as developed countries have [49].

<sup>3</sup> Brundtland Commission (1987), page 41

<sup>4</sup> It should be noted that for all legal documentation referred to in this document, no page numbers have been included as such documents do not contain page-numbering. If page numbers are used, the numbering depends on the source used, i.e. the specific book in which the legislation is published.

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The inter-generational and intra-generational principle was firstly laid down in the Stockholm Declaration [7]. In the second principle of the Declaration the right to national resources is described: *'the natural resources of the earth, including air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.'* [7] In summary, the principle indicates that in order to ensure access of both current and future generations careful planning and management of available resources is required.

The principle of inter-generational and intra-generational has been repeated and extended in the Rio Declaration [18]. Principle 3 of the Rio Declaration explicitly refers to both sides of the principle: i.e. *'the right to development must be fulfilled so as to equitably meet development and environmental needs of present and future generations.'* [18] This principle does not only refer to natural resources, but encompasses all types of environment. Although most countries have signed both the Stockholm and Rio Declarations and therefore have expressed their political will to abide by the principles, reality is more complex and the compliance with those principles does not always happen.

### Precautionary Principle

The third principle is the precautionary principle which aims to achieve an active attitude from States and urge them to protect the environment as best as possible. The principle is more or less similar to 'do no harm' principles laid down in various national systems. Both the do not harm principle and the precautionary principle indicate that actions causing serious or irreversible damage should be avoided. Instead less damaging actions should be taken to ensure sufficient environmental standards. [49]

The precautionary principle is, similar to the sustainability principle and the inter-generational and intra-generational principle mentioned above, laid down in the Rio Declaration [18]. Principle 15 of the Rio Declaration states that the precautionary approach shall be widely applied by States in order to protect the environment. The principle also states that: *'Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.'* [18]. This implies that the argument that no full scientific certainty is available can never be a reason to postpone cost-effective measures that aim to prevent environmental degradation.<sup>5</sup>

### The Polluter Pays Principle

The last principle indicates that the party causing damage to the environment is also the party that has to pay for the pollution and resulting damage caused. This principle can be divided in two sub-principles; relating to incidental damage and structural damage. Firstly, someone causes large damage *at a certain point in time* can be held liable for his actions. For instance, a chemical factory leaking hazardous materials in a nearby river and thereby causing human health problems. Secondly, someone causes damage *in a structural way* and therefore can be asked to pay for the damage. For

<sup>5</sup> It should be noted that this principle is under debate. The EU believes that if there is no FULL SCIENTIFIC CERTAINTY that XY is harmless to environment, XY should not be used. The USA (and many others) believes that if there is no FULL SCIENTIFIC PROOF that XY is harmful to the environment; XY should be allowed to use.

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example, trucks consequently emitting too many emissions into the air can be asked for compensation via road taxes. [49]

The first sub-principle is laid down in several international declarations and treaties. A first example can be found in the Stockholm Declaration, which in principle 22, indicates that *‘States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.’* [7] The principle has been further clarified in the Rio Declaration, i.e. principle 18 [18]. The polluter pays principle is also included in many EU regulations. Most relevant for this analysis is Directive 2004/35/CE of 21 April 2004 on environmental liability [9], which will be described in Chapter 5.

The second sub-principle is not only embedded in several legal sources, but is also a well-known concept in economic theory. Before the adoption of the polluter pays principle, society was often bearing the costs of pollution, although the majority of society had not caused the problem. The costs of pollution were external for the polluter as society would compensate the polluter for the cost made by him. With the introduction of the polluter pays principle, these external costs (borne by society) are internalised and form a mark-up on the costs made by the polluter. In principle the polluter has to pay for the damage he causes and it is expected that the polluter will be more careful in causing environmental damage as he will be held accountable for each and every penny. [56]

Although the principle is introduced, it might be difficult to always make the polluter pay, as it may be hard to identify the actual polluter. Once the actual polluter is identified, it may be difficult to convict the polluter and make him pay the compensation. Despite these practical problems, the principle is extensively laid down in different types of legislation, for example in the Rio Declaration, principle 16: *‘National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment’.* [18]

## 3.2 Specific EU environmental regulation

As described in the previous section environmental legislation is based on four general principles. Therefore, all EU environmental related regulation is in line with the four principles. Next, to the incorporation of the widely accepted principles, the EU has adopted much regulation that focuses on environmental protection and improvement. However, although a large number of EU Regulations and Directives cover environmental related topics, many of the regulations and directives are not applicable during a disaster. Therefore, those instruments will only be briefly discussed. The discussion divides the EU environmental regulation into three main categories:

1. ‘Technical’ environmental legislation;
2. Spatial planning;
3. Environmental impact assessments.

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### 3.2.1 Link between technical environmental directives and crisis management

The EU has adopted a wide range of environmental legislation.<sup>6</sup> Although many regulations and directives are adopted in the field of environmental protection, these regulations and directives often do not directly relate to crisis management. Most of the EU environmental regulation can be qualified ‘technical environmental legislation’, regulating very specific aspects of environmental protection. For example, the ‘Directive on ambient air quality and cleaner air for Europe’ regulates the maximum emission levels allowed throughout the Union, while the ‘Environmental Noise Directive’ indicates the maximum noise levels permitted. In the box below examples from these two more technical pieces of environmental regulations are presented.

#### Article 5 - Assessment regime (Ambient Air Directive)

1. The upper and lower assessment thresholds specified in Section A of Annex II shall apply to sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter (PM<sub>10</sub> and PM<sub>2,5</sub>), lead, benzene and carbon monoxide. [57]

#### Article 5 - Noise indicators and their application (Environmental Noise Directive)

1. Member States shall apply the noise indicators  $L_{den}$  and  $L_{night}$  as referred to in Annex I for the preparation and revision of strategic noise mapping in accordance with Article 7.

Until the use of common assessment methods for the determination of  $L_{den}$  and  $L_{night}$  is made obligatory, existing national noise indicators and related data may be used by Member States for this purpose and should be converted into the indicators mentioned above. These data must not be more than three years old.[58]

Because the legislation is so specific, the link between the EU environmental legislation and crisis management is less apparent. Of course, the legislation is precautionary and contributes to minimising the change on a disaster; however it is not primarily adopted for such purposes. It should be noted that most of the rules laid down in the EU environmental legislation does not even apply when a disaster occurs. Also, in the direct aftermath of the crisis these rules do not apply. The rules are temporarily inoperative.

Although these regulations and directives do not directly contain rules that apply during a crisis, following of these regulations and directives will reduce the risks of a disaster. In essence, this legislation, although quite technical, aims to improve the environment. By considering these rules the EU society will be better protected against disasters, as negligent behaviour towards the environment will be diminished. Indirectly, all EU environmental regulations and directives will contribute to preventing of a disaster. However, due to their high level of specificity, their weak link with crisis management (as focused on in DRIVER) and their very diverse nature, the more technical environmental legislation will not be further analysed.

<sup>6</sup> A good overview of the wide variety of environmental legislation applicable in the Union is given by the ‘Handbook on the implementation of EC environmental legislation [54]’. The Handbook is divided into 9 thematic sections (e.g. noise, air, waste etc.). Each of these sections provides a clear overview of the adopted EU legislation in this area. For each of the regulations or directives adopted a summary is presented, indicating what is regulated by the source and how the source should be interpreted.

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### 3.2.2 Link between spatial planning and crisis management

Besides the technical environmental legislation, the EU has also adopted a wide range of regulations and directives regarding spatial planning, zoning and the creation of protected areas. Such regulation provides a legal framework for human activities in both urban and rural areas. Aim of the regulations and directives is to allow for human activities to take place, on the one hand, while protecting the environment, on the other. Therefore, some human activities need to be carried out far away from dense areas (e.g. generation of nuclear energy), while other rules indicate that no or only a limited human activity may take place in dedicated areas (e.g. within Natura2000 areas).

In EU legislation the following main spatial planning related regulations and directives are in place<sup>7</sup>:

- Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitat Directive) [5];
- Directive 2014/89/EU establishing a framework for maritime spatial planning [15].

The main aim of EU regulation on spatial planning, zones and protected areas does not lie primarily on reducing the risks of disasters. Of course, careful planning and the establishments of protected zones will reduce the negative impact of human activities on specific areas. Ultimately, the environment will be better protected. When the rules are carefully followed the risk of a disaster may be reduced. However, as the direct link between EU spatial planning regulation and crisis management is limited, these regulations and directives will not be further analysed during this study.

### 3.2.3 Link between Environmental Impact Assessments and crisis management

Environmental impact Assessments (EIAs) and other evaluation tools can be used to reduce the risk of disasters. The EIA allows for a better understanding of how disasters might occur (i.e. where do the main risks lie?). In addition, EIAs can provide useful insights in the underlying causes of vulnerability. If an EIA is sufficiently carried out, much additional information can be obtained and the potential risks identified in the EIA can be mitigated or reduced in an early stage, thereby minimizing the impact on and of a disaster.

The EU has laid down the obligation to conduct an EIA in Directive 2014/52/EU [14]. This directive indicates that for most large public and private projects an EIA needs to be carried out (Article 2.1). Often this will relate to projects like the construction of highways, other infrastructure or large building projects. The focus of the EIA will not directly be on disasters however, by carefully assessing potential environmental impacts; the risk of a disaster can be reduced. As the EIA is often part of the policy making process, the EIA can be seen as a tool contributing to the prevention phase in crisis management. The EIA should indicate how certain negative impacts will be mitigated. If the EIA shows that it is not possible to mitigate the effects, the project will likely be rejected.

As all EU28 countries have implemented the Environmental Impact Assessment directive, the rules laid down in the Directive will apply to all Member States. Therefore, each large project with a

<sup>7</sup> Please be aware that the list is non-exhaustive, however the authors have tried to list the most important ones.

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potential impact on the environment (including impacts on the population and human health) needs to be thoroughly assessed, according to EU standards.

### 3.3 The DG ECHO legal framework for civil protection

The main responsible Directorate General in the EU in the field of crisis management is the European Commission's Humanitarian aid and Civil Protection department (DG ECHO). To be able to carry out its work effectively, a dedicated legal framework has been adopted. This legal framework consists of three regulations / decisions and several accompanying implementing rules. Besides these formal documents several Commission conclusions and Parliament resolutions might be relevant.

#### Legislation

The main regulations / decisions are:

- Regulation (EU) No 375/2014 of 3 April 2014 establishing the European Voluntary Humanitarian Aid Corps [17];
- Decision No 1313/2013/EU of 17 December 2013 on a Union Civil Protection Mechanism [6];
- Council Regulation (EC) No 1257/96 of 20 June 1996 concerning humanitarian aid [4].

These regulations / decisions form the backbone of the work carried out by DG ECHO and all actions undertaken need to consider the rules laid down in these regulations / decisions. Although these documents contain the basic principles for DG ECHO's work, none of them refer directly to environmental impacts or to environmental protection in relation to the provision of humanitarian aid.

Decision 1313/2013 [6] makes the most explicit reference to environmental protection. The reference is made in Article 1.2 which states that *'The protection to be ensured by the Union Mechanism (on civil protection, author's note) shall cover primarily people, but also the environment and property, including cultural heritage'*[6]. This article implies that activities taken within the civil protection mechanism will ensure the protection of the environment; however the protection of human life will take preference over the protection of the environment. In case of a conflict between protecting people and protecting the environment, the protection of human life will precede. This is in line with principles of international customary law.

The other two regulations do not refer to environmental protection specifically.

Although no explicit articles concerning environmental protection or environmental impacts are included, all actions deriving from the three legal documents will need to consider the environment and reduce the negative impacts on it. The documents mentioned are part of the so-called secondary legislation of the European Union.<sup>8</sup> Therefore, the legal framework for civil protection should be in line with legislation higher up in the hierarchy. Especially in the primary legislation, some relevant principles regarding environmental protection are included. The most relevant articles in the founding treaties are:

<sup>8</sup> For more information on the EU legal framework and hierarchy of legislation, please refer to Annex I.

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- Article 3.3 of the TEU - Protect and improve the environment
- Article 11 of the TFEU - Integrate environmental protection requirements in policies and activities
- Article 37 of the Charter - Ensure high level environmental protection

For a more detailed description of the three articles mentioned, please refer to Chapter 5.

In addition to the above indicated articles, Article 214 (2) TFEU [20] indicates that: *'humanitarian aid operations shall be conducted in compliance with the principles of international law and with the principles of impartiality, neutrality and non-discrimination.'*[20] This article implies that all rules adopted in international treaties and declarations regarding environmental protection in humanitarian aid apply to EU aid workers as well, irrespective the place where they provide the aid.

### Implementing rules

Besides the three regulations / decisions, several implementing rules have been adopted. These implementing rules are more specific than the regulations / decisions mentioned above. They provide more practical guidance and indicate how certain institutions / systems established in the regulations will be operated in practices.

Although the implementing rules contain more specific examples of activities carried under the civil protection mechanism, the actual guidance on environmental impact of civil protection actions is limited. Most relevant article is Article 12 of the Commission Implementing Decision of 16 October 2014 [2]. The article lays down the obligation for 'modules'<sup>9</sup> to be self-sufficient. The article will be described in more detail in Chapter 5 (i.e. principle 6).

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<sup>9</sup> The decision introduces the term modules and most provisions relate to them. A module is a dedicated team of (first) responders which can be used for a very specific task in crisis management. Examples of possible modules are the 'heavy urban search and rescue module', the 'water purification module' and the 'ground forest firefighting module'.

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## Step 2: Annotated catalogue

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## 4 The template

In order to analyse the different sources of legislation and official documents a template has been developed to conduct the analysis in a structured and comprehensive way. This template is used to analyse both legal sources and crisis management tools. The template consists of the following elements:

- Source of the legislation, principle or tool;
- Scope of application and level of bindingness to crisis management;
- Content of the legislation, principle or tool;
- Links with other tools, principles and regulations;
- Impact on DRIVER (specific) and crisis management in general;
  - ✓ *Expected environmental impact?*
  - ✓ *Affected environment?*
- Influence on crisis management?
- Positive impacts and opportunities;
- Checklist for DRIVER partners;
  - ✓ *Do's*
  - ✓ *Be aware*
- More information.

Each element is discussed below.

**Source:** Under this heading the official name of the source is presented. This refers to one of the five sources included in the analysis (please refer to previous section). Besides the official name, this part refers to who adopted the principle and when.

**Scope of application and level of bindingness:** This part indicates to whom the principle or tool applies. This can differ as sometimes a principle will only apply to policy makers (national authorities), while other principles may also apply to crisis managers and citizens.

Besides applicability the level of bindingness will be described. This description indicates whether the rule or principle always needs to be followed or if it allows for deviation. In some cases the legislation or principle is more guiding, asking the addressee to make the necessary effort. If the addressee can prove that the effort has been made, they will have fulfilled their legal obligation.<sup>10</sup> In other cases the

<sup>10</sup> In such cases, principles will often ask awareness on the side of the addressee (e.g. try to protect the environment as much as possible).

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principles can contain an obligation. If the addressee is not able to fulfil this obligation, they will have failed their legal obligation.<sup>11</sup>

**Content:** In this paragraph the relevant rules and principles will be indicated. In a box the literal text of the rule or principle is presented, however only the relevant parts of the text will be presented there. Besides presenting the relevant rules and principles, this section will provide an explanation of what is written down. What does the rule or principle enhance, what are relevant linkages with other rules of that specific source and what are the exemptions allowed for?

**Applicability in crisis management:** Not all legislation and principles analysed will apply during a crisis. They focus on environmental protection, but sometimes can be set aside during or in the direct aftermath of a crisis. This paragraph will indicate whether or not this is the case.

In addition, this paragraph also indicates to which phases of the crisis management cycle the legislation or principle applies, i.e. prevention, preparedness, response, recovery or multiple phases.

**Links with other tools, principles and regulations:** Legislation, principles and tools do not stand alone; they are part of a wider set of rules and principles. Therefore, this paragraph indicates which links with others tools, principles and regulations do exist.

**Impact on DRIVER (specific) and crisis management in general:** In this paragraph three specific questions are addressed which will elaborate on the relation between the regulation/principle on the one hand and crisis management/DRIVER on the other hand.

- *Expected environmental impact?*
  - ✓ The first question to be answered relates to the expected environmental impact. If this regulation/principle is used in crisis management/DRIVER is a positive or negative effect on the environment to be expected? In other words what is the likely outcome if a certain principle is used in preparing/responding to a crisis?
- *Affected environment?*
  - ✓ Second question relates to the environment that is affected by the regulation or principle. A distinction will be made between nature; the built environment and human health (please refer to Chapter 2).
- *Influence on crisis management?*
  - ✓ The last question assesses how crisis management itself is influenced by the regulation/principle. Will it become easier to conduct crisis management activities or is the regulation/principle putting a constraint on certain crisis management activities?

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<sup>11</sup> Principles of this nature often indicate that addressee should do this or should avoid that. In case he does not he might be punished in one way or another; e.g. he is forced to pay compensation or he will be brought to court.

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**Positive impacts and opportunities:** Regulation and principles do not only create limitations to crisis management activities or other activities that might affect the environment in a negative way. Often many regulations and principles can have positive side effects or create opportunities to further improve the environment as well. This paragraph aims to identify such positive impacts and opportunities which can improve the environment in general and might be beneficial for crisis management in particular.

**Checklist for DRIVER partners:** This paragraph is a summary of the analysis carried out above. Based on the information gathered concrete advice will be given to DRIVER partners. The advice will be presented in bullet points divided between two categories; the do's and the be aware's.

- *Do's*
- *Be aware*

**More information:** In this paragraph links to sources are be included, which provide additional information.

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## Overview of instructions

- Instruction 1 Support sustainable development in Europe
- Instruction 2 Protect and improve the environment
- Instruction 3 Integrate environmental protection requirements in policies and activities
- Instruction 4 Act jointly in the spirit of solidarity
- Instruction 5 Facilitate high level environmental protection
- Instruction 6 Guarantee self-sufficiency of first responders (modules)
- Instruction 7 Focus flood risk management plans towards prevention, protection, preparedness
- Instruction 8 Base flood risk management plans on the principle of solidarity
- Instruction 9 Implement major-accident prevention policies
- Instruction 10 Exempt first responders, under certain conditions, from environmental liability
- Instruction 11 Focus on local resources when providing aid
- Instruction 12 Do no harm
- Instruction 13 Provide aid taking into account immediate and long term environmental impacts
- Instruction 14 Include environmental development in emergency relief
- Instruction 15 Deprive no one of his/her means of subsistence
- Instruction 16 Derogation in case of public emergency
- Instruction 17 Respect the fundamental right to life in an environment of quality
- Instruction 18 Plan human settlements and urbanization respecting the environment
- Instruction 19 Adopt effective environmental legislation
- Instruction 20 Develop national law regarding liability and compensation for the victims
- Instruction 21 Notify other potentially affected States immediately of any natural disaster
- Instruction 22 Assess the potential environmental impact of a chemical disaster
- Instruction 23 Apply the disaster waste management guidelines
- Instruction 24 Use the debris and solid waste disposal guidance
- Instruction 25 Strive to reduce future vulnerabilities to disaster
- Instruction 26 Familiarize yourself with the Environmental guidebook for military operations
- Instruction 27 Familiarize yourself with the Guidebook on Environmental Considerations during Military Operations

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## 5 The Instructions explained

Above, the list of 27 identified instructions was presented. As indicated in Chapter 1, for the identification of relevant instruction different sources have been analysed. The sources used to identify relevant environmental rules, regulations and principles, which resulted in the instruction, can be divided into four categories:

1. EU founding treaties
2. EU secondary legislation
3. International conventions and declarations, guidance and codes of conducts
4. Military principles

In the **EU founding treaties**<sup>12</sup> overall environmental principles that apply at all times, irrespective a disaster has materialised, can be found. These principles are in line with the general environmental principles, as described in section 3.1.

In the **EU secondary legislation**, e.g. regulations, directives and adopted statements, DRIVER specific legislation can be found. These sources contain relevant legislation that will affect, for instance, flooding and chemical incidents – disasters that have a central position in the DRIVER trails.

**International conventions, declarations, guidance documents and codes of conduct** are third source of inspiration to identify relevant instructions. During the identification process both treaties and declarations regarding environmental protection have been considered, as well as treaties and declarations used in the field of crisis management, civil society protection and humanitarian aid. Besides treaties and declarations also guidance documents and codes of conduct have been studied.

In addition, **military principles** could be used during and in the direct aftermath of a crisis. It is important to note that military principles can be an important source of inspiration for the development of an annotated catalogue as they are applicable to emergency situations considering a high environmental protection level at all times. These principles do focus on environmental impacts in relation to crisis management activities. Concrete examples are provided which can be included within civil crisis management organisations as well.

<sup>12</sup> i.e. Treaty on the European Union (TEU), Treaty on the Functioning of the European Union (TFEU) and Charter of Fundamental Rights of the European Union [22]

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## 5.1 Instruction 1: Support sustainable development in Europe

### Source

Treaty of the European Union (2012/C 326/01) adopted by the European Parliament, the Council and the Commission.

### Scope of application and level of bindingness

Together with the Treaty on the Functioning of the EU (TFEU) and the Charter on the fundamental rights, the Treaty of the European Union (TEU) forms the backbone of the European acquis and is qualified as the primary legislation of the European Union. All provisions laid down in one of the three Treaties or Charter always apply and are binding in their entirety. Therefore, deviations from those articles are not allowed, except under very exceptional circumstances.

The article described below, applies to the entire EU, including all European bodies. The instruction, based on the article presented below, needs to be incorporated (either explicitly or implicitly) in all legislation, decisions and policies made by the EU. It also applies to all Member States and therefore national law should be in line with Article 3.3 TEU as well. Both the EU and Member States should ensure that no intentional harm to the environment is done.

### Content

The most relevant article of TEU regarding crisis management and its impact on the environment, is Article 3.3 relating to the creation of an internal market. In order to create the internal market, the development of Europe should be sustainable (as indicated in the box below). As indicated in Chapter 3 sustainable development is one of the four key principles on which environmental legislation is based. Article 3.3 and the principle of ensuring sustainable development form the backbone of all EU action.

#### Article 3.3

The Union shall establish an internal market. It shall work for the **sustainable development of Europe** based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment. It shall promote scientific and technological advance.[19]

### Applicability in crisis management

This instruction is broadly defined and does not specifically relate to crisis management. However, as part of the primary legislation of the EU, the principle of sustainable development will indirectly apply to all crisis management activities conducted by actors falling under the scope of the European acquis. Hence, it will apply to crisis management activities provided within the EU.

The instruction will play a role in all phases of crisis management, with a strong focus on prevention, preparedness and long term recovery. As pointed out in Chapter 2 sustainable development and

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disasters influence one another. Unsustainable development can increase the risk on a disaster, e.g. deforestation can lead to an increased risk of flooding.

### Links with other tools, principles and regulations

The article is part of one of the main European legislative documents and therefore all regulations and directives resulting from the TEU, should be in line with the instruction.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The expected environmental impact is positive.
- *Affected environment?*
  - ✓ All environments will be affected.
- *Influence on crisis management?*
  - ✓ If carried out correctly crisis management will be influenced positively.

### Positive impacts and opportunities

See above.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Ensure that all development is sustainable. Avoid, or at least minimise, the potential risks of a disaster.
- *Be aware*
  - ✓ Do not deviate without a valid reason. Only a limited number of reasons might allow for deviation, e.g. the immediate saving of human lives with environmental damage as an unavoidable result.
  - ✓ The instruction sets the conditions under which EU crisis management should be conducted. Not all crisis management tools can be used as they might negatively influence the environment. Only when a law exists, which allows for deviation of the instruction in case of a severe crisis, the tool might be used.

### More information

- Treaty of the European Union (2012/C 326/01) adopted by the European Parliament, the Council and the Commission [19].

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## 5.2 Instruction 2: Protect and improve the environment

### Source

Treaty of the European Union (2012/C 326/01) adopted by the European Parliament, the Council and the Commission.

### Scope of application and level of bindingness

Together with the Treaty on the Functioning of the EU (TFEU) and the Charter on the fundamental rights, the Treaty of the European Union (TEU) forms the backbone of the European acquis and is qualified as the primary legislation of the European Union. All provisions laid down in one of the three Treaties or Charter always apply and are binding in their entirety. Therefore, deviations from those articles is not allowed, except under very exceptional circumstances.

The article described below, applies to the entire EU, including all European bodies. The instruction based on the article presented below, needs to be incorporated (either explicitly or implicitly) in all legislation, decisions and policies made by the EU. It also applies to all Member States and therefore national law should be in line with article 3.3 TEU as well. Both the EU and Member States should ensure that no intentional harm to the environment is done.

### Content

The instruction to protect the environment on a high level and to improve the quality of the environment is also laid down in Article 3.3 TEU. The article indicates why an internal market is needed and that part of the goals of the establishment of an internal market is to ensure a high level of environmental protection as well as to improve the environmental quality.

#### Article 3.3

The Union shall establish an internal market. It shall work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and **a high level of protection and improvement of the quality of the environment**. It shall promote scientific and technological advance.[19]

### Applicability in crisis management

The instruction is broadly defined and does not specifically relate to crisis management. However, as part of the primary legislation of the EU the article will apply to all crisis management activities conducted by actors falling under the scope of the European acquis. Hence, it will apply to crisis management activities provided within the EU.

### Links with other tools, principles and regulations

The article is part of one of the main European legislative documents and therefore all regulations and directives derivate from it should be in line with the instruction.

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## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The expected environmental impact is positive.
- *Affected environment?*
  - ✓ All environments will be affected.
- *Influence on crisis management?*
  - ✓ If carried out correctly crisis management will be influenced positively.

## Positive impacts and opportunities

See above.

## Checklist for DRIVER partners

- *Do's*
  - ✓ Ensure that the environment is not unnecessarily damaged when responding to a crisis.
- *Be aware*
  - ✓ Do not deviate without a valid reason. Only a limited number of reasons might allow for deviation, e.g. the immediate saving of human lives with environmental damage as an unavoidable result.
  - ✓ The instruction sets the conditions under which EU crisis management should be conducted. Not all crisis management tools can be used as they might negatively influence the environment. Only when a law exists, which allows for deviation of the instruction in case of a severe crisis, the tool might be used.

## More information

- Treaty of the European Union (2012/C 326/01) adopted by the European Parliament, the Council and the Commission [19].

## 5.3 Instruction 3: Integrate environmental protection requirements in policies and activities

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### Source

Treaty on the Functioning of the European Union (TFEU) (C 326/53) adopted by the European Parliament, the Council and the Commission (2012).

### Scope of application and level of bindingness

The TFEU is one of the main treaties the European Union and together with the Treaty on the European Union (TEU) and the Charter of Fundamental Rights of the European Union is part of the primary legislation of the European Union [22]. Therefore, the provisions laid down in the TFEU do

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always apply, unless explicitly stated otherwise. All secondary legislation adopted should be in line with the Treaties and the Charter.

## Content

First relevant article in the TFEU is Article 11 which refers to environmental protection requirements. This article states that in all Union policies and activities the requirements to ensure environmental protection need to be integrated. Due to the strong formulation (i.e. must be integrated) no room for deviation from this provision exists. However, it should be noted that environmental considerations should be taken into account in policies where it may be relevant. As a result, all policies and activities undertaken by the Union must include requirements for environmental protection as much as possible.

### Article 11

Environmental protection requirements must be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development.[20]

## Applicability in crisis management

The provision does not directly relate to crisis management as the provision relates to the policies and activities adopted by the Union. However, much crisis management, civil protection and humanitarian aid related policies and regulations have been adopted, which are all part of the secondary legislation of the EU. This secondary legislation is based on the more general provisions laid down in the primary law. Therefore Article 11 TFEU is indirectly embedded and incorporated in crisis management policies.

Article 11 will indirectly influences all phases of the crisis management cycle, although in some phases the focus on environmental protection might be stronger than in others.

## Links with other tools, principles and regulations

See above.

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The expected environmental impact is likely positive, as requirements to ensure environmental protection are included in relevant policies and activities.
- *Affected environment?*
  - ✓ This instruction affects nature.
- *Influence on crisis management?*
  - ✓ Crisis management activities are influenced positively by Article 11, as all relevant crisis management legislation will include requirements for environmental protection.

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## Positive impacts and opportunities

Because the provision is laid down in one of the core documents of the EU acquis, its impact is large. All secondary legislation adopted within the EU is affected by the instruction. Therefore all EU legislation regarding crisis management, civil protection and humanitarian aid needs to ensure the environment is sufficiently protected during crisis management activities.

## Checklist for DRIVER partners

- *Do's*
  - ✓ Ensure that the environment is not unnecessarily damaged when responding to a crisis.
- *Be aware*
  - ✓ In all policies and activities of the Union requirements for environmental protection are included. Be aware that you should focus on the protection of the environment even when it is not mentioned explicitly.

## More information

- Treaty on the Functioning of the European Union (TFEU) (C 326/53) [20].

## 5.4 Instruction 4: Act jointly in the spirit of solidarity

### Source

Treaty on the Functioning of the European Union (TFEU) (C 326/53) adopted by the European Parliament, the Council and the Commission (2012).

### Scope of application and level of bindingness

The TFEU is one of the main treaties of the European Union and together with the Treaty on the European Union (TEU) and the Charter of Fundamental Rights of the European Union is part of the primary legislation of the European Union [22]. Therefore the provisions laid down in the TFEU do always apply, unless explicitly stated otherwise, and all secondary legislation adopted should be in line with the Treaties and the Charter.

### Content

An important, but less explicit, article in the TFEU that will impact crisis management is Article 222 containing the solidarity clause. The clause requires both the Union and Member States to act in the spirit of solidarity in case one or more Member States face terrorist attacks or disasters. This implies that the Union and Member States not affected should offer all possible help to the Member State(s) that is/are affected. Implicitly, this clause requires that in offering support, the Union or Member States offering the support, need to consider possible damaging effects of their support, amongst others, to the environment of the affected Member State. Offering support should not lead to a worsened situation in the already affected country.

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#### Article 222: Solidarity clause

1. The Union and its Member States shall act jointly in a spirit of solidarity if a Member State is the object of a terrorist attack or the victim of a natural or man-made disaster. The Union shall mobilise all the instruments at its disposal, including the military resources made available by the Member States, to:

(a) ...

(b) assist a Member State in its territory, at the request of the political authorities, in the event of a natural or man-made disaster.

#### Applicability in crisis management

The solidarity clause applies only in crisis situations, and therefore is most apparent in the response and recovery phase. In these phases, the solidarity clause will play a large role as in these phases actual help will be given to the affected Member State(s). If aid providers cause damage, the affected Member State(s) will directly be confronted with additional damage. Also in the other phases, prevention and preparedness, this instruction could play an indirect role.

#### Links with other tools, principles and regulations

The solidarity clause is indirectly part of many other pieces of EU legislation. Because the instruction is laid down in one of the founding treaties it will be entwined in all legislation originating from those founding treaties. The clause itself became more concrete with the adoption of the Council Decision of 24 June 2014 on the arrangements for the implementation by the Union of the solidarity clause. In this decision more precise rules on how to invoke the solidarity clause (Article 4) and response by the EU (Article 5) have been laid down.[59]

#### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ A positive effect can be expected. Although not stated explicitly, the instruction indirectly urges responders to a crisis to consider the impact of their actions (e.g. of their actions on the environment of affected countries where they provide aid).
- *Affected environment?*
  - ✓ All environments can be affected, however when providing aid to another country often the human health and nature have more focus than the built environment, which also needs to be considered.
- *Influence on crisis management?*
  - ✓ The instruction influences crisis management positively, because it ensures that sufficient capacity is available, a large pool of experts is ensured. Coordination via the EU may have some drawbacks if not efficiently organised, but it still guarantees a large scale response with all necessary manpower. It also allows alerting all countries at once and possibly prevent further (cross-border) damage.

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## Positive impacts and opportunities

One of the main effects of this instruction is raising awareness amongst responders and crisis managers. When they consider the solidarity principle carefully they are likely to cause less damage as they can be made more aware of the potential negative impact of their CM activities. Because the instruction is laid down in primary legislation the instruction will influence all legislation originating from this primary legislation. An increased focus on environmental impacts might arise.

## Checklist for DRIVER partners

- *Do's*
  - ✓ Monitor situation at home and abroad.
  - ✓ Offer help to neighbours in need.
  - ✓ Ask for help when in crisis.
- *Be aware*
  - ✓ Do not cause unnecessary additional damage to the environment of the already affected country.
  - ✓ When choosing CM tools environment impacts should be taken into account.
  - ✓ Be aware not to cause more damage than already done by the disaster.
  - ✓ Respect the environment of the country you are providing support to.

## More information

- Treaty on the Functioning of the European Union (TFEU) (C 326/53) [20].
- Council Decision of 24 June 2014 on the arrangements for the implementation by the Union of the solidarity clause [59]

## 5.5 Instruction 5: Facilitate high level environmental protection

### Source

Charter of the Fundamental rights of the European Union (2010/C83/02) adopted by the European Parliament, the Council and the Commission.

### Scope of application and level of bindingness

The Charter is part of the EU legal framework and was until 1 December 2009 a non-binding document. Since the entry into force of the Lisbon Treaty on 1 December 2009, the Charter became a legally binding document for all EU institutions and Member States when implementing EU law (Article 51 of the Charter). Therefore, all EU bodies and Member States are bound to the principles laid down in the Charter.

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## Content

The principles laid down in the Charter are consistent with the European Convention on Human rights. Therefore, the fundamental human rights are incorporated in EU law through the Charter. In some places the Charter is more elaborate than the Convention. The Charter also provides for more rights. For crisis management in general and DRIVER in particular, Article 37 on environmental protection is a crucial article<sup>13</sup>. As indicated before all policies adopted by the EU should ensure a high level of environmental protection and should aim to improve the quality of the environment. This implicates that all regulations adopted concerning crisis management, civil protection and humanitarian aid should respect this article and ensure that the environment is sufficiently protected.

### Article 37: Environmental protection

A high level of environmental protection and the improvement of the quality of the environment must be integrated into the policies of the Union and ensured in accordance with the principle of sustainable development.[1]

The Charter is, next to the TFEU and TEU, part of the core EU legal framework and forms the backbone of the EU acquis. Deviation of principles laid down in the core legal documents is not lightly done and so exemptions to those documents are very rare. If an exemption to the principle applies, this needs to be laid down in law (Article 52 of the Charter).

## Applicability in crisis management

In line with the above reasoning the instruction of environmental protection will also apply during a crisis and the related relief actions provided. However, based on a common understanding the focus on environmental protection might lessen when more pressing actions need to be taken, e.g. saving human lives. In general, saving human lives will have a higher priority than saving parts of nature.

The instruction of environmental protection will apply to all phases of the crisis management cycle, although in some phases the focus on environmental protection might be stronger than in others. Especially in preparedness and long-term recovery focus on environmental protection will be strong.

## Links with other tools, principles and regulations

As indicated this instruction is laid down in one of the core EU legislations, i.e. the Charter. Therefore this instruction will be the basis of much secondary EU legislation and will indirectly be incorporated in all regulations, directives, communications etc.

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ Based on the instruction itself no direct environmental impact can be expected. However, the instruction influences all other EU regulations and actions and urges the EU

<sup>13</sup> It should be noted that a similar article is not included in the European Convention on Human rights.

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organisation and Member States to protect the environment and improve its quality where possible.

- *Affected environment?*
  - ✓ This instruction mainly influences nature.
- *Influence on crisis management?*
  - ✓ The instruction sets the conditions under which EU crisis management should be conducted. Not all crisis management tools can be used as they might negatively influence the environment. Only when a law exists, which allows for deviation of the instruction in case of a severe crisis, the tool might be used.

### Positive impacts and opportunities

Because the instruction is laid down in one of the core documents of the EU acquis its reach is large and all secondary legislation adopted within the EU is affected by the instruction. All legislation needs to be in line with the principles laid down in the Charter. Therefore, all EU legislation regarding crisis management, civil protection and humanitarian aid need to ensure the environment is sufficiently protected during crisis management activities.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Ensure that you do not damage the environment when carrying out your activities. Where possible try to improve the current quality of the environment.
- *Be aware*
  - ✓ The instruction always applies, only when thoroughly motivated arguments exist which are laid down in law, you might deviate from the instruction, however this will only rarely happen.

### More information

- Charter of the Fundamental rights of the European Union (2010/C83/02) [1].
- [http://ec.europa.eu/justice/fundamental-rights/charter/index\\_en.htm](http://ec.europa.eu/justice/fundamental-rights/charter/index_en.htm) [33].

## 5.6 Instruction 6: Guarantee self-sufficiency of first responders (modules)

### Source

Commission Implementing Decision of 16 October 2014 laying down rules for the implementation of Decision No 1313/2013/EU of the European Parliament and of the Council on a Union Civil Protection Mechanism (2014/762/EU).

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## Scope of application and level of bindingness

The rules are a further elaboration of Decision 1313/2013 on a Union Civil Protection Mechanism.<sup>14</sup> This Mechanism does apply to (a) prevention and preparedness actions inside the Union and in some specific cases outside the EU and (b) to actions to assist with the response to immediate adverse consequences of a disaster inside or outside the Union. The Implementing Decision applies in the same situations as Decision 1313/2013. As the rules laid down in the Implementing Decision apply to civil protection in the aftermath of a disaster, the rules will be binding during crisis management.

## Content

The Implementing Decision introduces the term modules and most provisions relate to the modules. A module is a dedicated team of (first) responders which can be used for a very specific task in crisis management. Examples of possible modules are the ‘heavy urban search and rescue module’, the ‘water purification module’ and the ‘ground forest firefighting module’.

Article 12 of the Implementing Decision applies to all modules mentioned in Annex II of the same Decision. In the Annex, each module is described in detailed and for each module is indicated if Article 12 fully applies or that deviations for that particular module are possible. In the box below the main self-sufficiency measures that need to be taken, are described.

### Article 12: Self-sufficiency of modules

1. The following elements of self-sufficiency shall apply to each module as specified in Annex II:  
(a) appropriate shelter for the prevailing weather; (b) power generation and lighting covering the consumption of the base of operation and of the equipment required to fulfil the mission; (c) sanitation and hygiene facilities destined for the personnel of the module; (d) availability of food and water for the personnel of the module; (e) medical or paramedical staff, facilities and supplies for the personnel of the module; (f) equipment storage and maintenance of the equipment of the module; (g) equipment for the communication with the relevant partners, notably those in charge of the coordination on site; (h) local transportation; (i) logistics, equipment and staff enabling the setting-up of a base of operations and the beginning of the mission without delay upon arrival on site.[2]

The Article 12.2 states that the Member State offering aid, need to ensure that the modules sent are self-sufficient. These modules also need to make all necessary arrangements on the site for their operations. The receiving state does not have to do that. Article 12.3 indicates that the modules need to be self-sufficient for at least 96 hours (after arriving at the scene) or for the periods laid down in Annex II of the Decision. Modules with a longer self-sufficiency requirement are the ‘medium urban search and rescue (at least 7 days)’, and the ‘heavy urban search and rescue (at least 10 days)’.

## Applicability in crisis management

The rules will always apply in case of a crisis. The Implementing Decision in general will apply to all phases of crisis management. Article 12 (self-sufficiency of modules) applies to immediate response and can be extended to a longer term response. If necessary the article can also be used during the recovery phase.

<sup>14</sup> Please refer to Chapter 3 for more information on Decision 1313/2013.

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## Links with other tools, principles and regulations

The self-sufficiency clause is linked to the overall civil protection mechanism. It can also be seen as concrete example of broader environmental related principles.

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The main environmental impact is a reduction of negative impacts in the crisis area, as the module will bring its own equipment and supplies. Therefore they do not have to rely on local supplies (these supplies can be distributed among the affected home population in the area). However, all equipment and supplies need to be brought to the crisis area, which will increase the environmental footprint of the module (which might be a negative environmental impact).
- *Affected environment?*
  - ✓ Main environment affected will be nature.
- *Influence on crisis management?*
  - ✓ Teams sent to respond to a crisis are able to provide for themselves, meaning that they do not have to rely on resources available in the country where they are providing aid. In addition, they can also start straightaway in providing aid as they do not have to waste time in collecting equipment etc. needed.

## Positive impacts and opportunities

The negative impact on the environment of the teams providing aid is reduced, as the teams already bring everything they need to survive for at least 96 hours. By bringing the supplies instead of obtaining them in the affected area they will reduce their environmental impact and can leave more for the supplies for the people already affected by the crisis. In areas of crisis supplies are often no longer available. Also supplies like water and food still in the area can be used by the affected home population reducing the overall environmental footprint.

## Checklist for DRIVER partners

- *Do's*
  - ✓ Ensure that the module that will be sent is indeed self-sufficient for the required period. Teams should at least have (see Article 12):
    - Appropriate shelter for the prevailing weather (i.e. depends on weather conditions)
    - Power generation and lightening possibilities
    - Sanitation and hygiene facilities for team members of the module
    - Food and water for the members
    - Medical or paramedic staff, facilities and supplies for the team members
    - Equipment storage and maintenance of the equipment
    - Communication equipment

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- Local transportation
  - Logistics, equipment and staff to start operations.
- ✓ Check in the table below, for each module that will be sent, (i) if the list above fully applies (right-hand column) and (ii) check how long the team needs to be self-sufficient (middle column)

Team focus	Minimum duration self-sufficiency	Specific requirements
High capacity pumping	96 hours	Applies fully
Water purification	96 hours	Applies fully
Medium urban search and rescue	At least 7 days of operation	Applies fully
Heavy urban search and rescue	At least 10 days if operation	Applies fully
Aerial forest firefighting using helicopters	96 hours	Only required: - Equipment storage and maintenance of equipment - Communication equipment
Aerial forest firefighting using airplanes	96 hours	Only required: - Equipment storage and maintenance of equipment - Communication equipment
Advanced medical post	96 hours	Applies fully
Advanced medical post with surgery	96 hours	Applies fully
Field hospital	96 hours	Applies fully
Medical aerial evacuation of disaster victims	96 hours	Only required: - Equipment storage and maintenance of equipment - Communication equipment
Emergency temporary camp	96 hours	Applies fully
Chemical, biological, radiological and nuclear detection and sampling (CBRN)	96 hours	Applies fully
Search and rescue in CBRN conditions	96 hours	Applies fully
Ground forest firefighting	96 hours	Applies fully
Ground forest firefighting using vehicles	96 hours	Applies fully
Flood containment	96 hours	Applies fully
Flood rescue using boats	96 hours	Applies fully

**Table 5: Self-sufficiency requirements per specific module**

- ✓ By ensuring the self-sufficiency of the module you are able to reduce the immediate effect of the team's arrival in the crisis area.
- *Be aware*
    - ✓ Complying with the self-sufficiency requirements will also cause an environmental impact. The more supplies are brought to the crisis area, the more transport is needed, which will cause a negative environmental impact.

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## More information

- Commission Implementing Decision of 16 October 2014 laying down rules for the implementation of Decision No 1313/2013/EU of the European Parliament and of the Council on a Union Civil Protection Mechanism (2014/762/EU) [2].

## 5.7 Instruction 7: Focus flood risk management plans towards prevention, protection, preparedness

### Source

Directive 2007/60/EC of 23 October 2007 on the assessment and management of flood risks adopted by the European Parliament and of the Council.

### Scope of application and level of bindingness

The measures are laid down in a directive and therefore apply to all EU Member States. However, as the measures are laid down in a directive, it means that the measures need to be transferred by each Member State into their own national law. This may lead to differences between the national regimes. Nevertheless, differences will occur on minor points, on the major points the regimes will be similar in all Member States.

### Content

The Directive is a specification of Directive 2000/60/EC [8] that requires Member States to develop river basin management plans for each river that falls within their jurisdiction. Aim of these river basin management plans is to ensure that good ecological and chemical status of rivers are achieved. Hence, that the overall water quality in all Member States improves. Although Member States have included measures to improve and maintain water quality, these plans only mention flood mitigation in passing, as it is not part of the core content of the Directive.

Directive 2007/60/EC therefore covers this issue and solely focuses on the assessment and management of flood risks. In order to manage potential flood risks, each Member State has to carry out several assessments and draft a number of plans for all water resources within its jurisdiction. The following activities are needed:

- Preliminary flood risk assessment (Articles 4 and 5);
- Flood hazard maps and flood risk maps (Article 6);
- Flood risk management plans (Articles 7 and 8).

For DRIVER especially the flood risk management plans are interesting as in these plans all aspects of flood management need to be described and measures to prevent, protect and prepare for possible flooding events to be included. For each water resource the potential risks and impacts need to be

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described as well as the measures taken need to be included (see box below). Such a plan could very well be part of a crisis management plan.

**Article 7.3 third paragraph: flood risk management plans**

Flood risk management plans shall address all aspects of **flood risk management focusing on prevention, protection, preparedness**, including flood forecasts and early warning systems and taking into account the characteristics of the particular river basin or sub-basin. Flood risk management plans may also include the promotion of sustainable land use practices, improvement of water retention as well as the controlled flooding of certain areas in the case of a flood event. [11]

### Applicability in crisis management

The measures laid down in the directive will mainly apply to the first phases of the crisis management cycle. For example, Article 7.3 shows that flood management especially refers to the prevention, protection and preparedness phase. Once an actual disaster occurs, the impact of this directive will be reduced. However, the plans are available and first responders can obtain vital information from them which makes their CM activities more effective.

### Links with other tools, principles and regulations

The directive is an elaboration of the environmental protection principles. In the end sufficient management plans should contribute to disaster risk reduction.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The environmental impact expected is positive as more effective measures can be taken. The negative impact (and end-result) of the flooding itself can be reduced.
- *Affected environment?*
  - ✓ All environments are affected, however especially nature and human life will experience a positive effect of a thorough risk assessment.
- *Influence on crisis management?*
  - ✓ If the assessments are carried out and the management plans are drawn information on the potential risks and impacts of flooding are known. First responders can incorporate this information in their response plans and by doing this can ensure that their response becomes more effective as fewer information gaps exist and their efforts can be more targeted.

### Positive impacts and opportunities

The main impact of this directive and especially the Articles 4 – 8 is that the relevant authorities have conducted a flood risk assessment, which needs to be updated regularly. For each water resource a thorough indication of the flood risk and potential impacts is available. This means that counter measures can be taken in order to reduce the risks and impacts. Also critical information that might stimulate a proper response to an immediate crisis has become available and can be used.

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## Checklist for DRIVER partners

- *Do's*
  - ✓ Check if the different flood management plans are available.
    - Please be aware that plans are made nationally, so for each individual EU Member State one needs to request the relevant flood management plans.
  - ✓ If yes, incorporate relevant information in your response plan and ensure that the measures you take are in line with these plans.
- *Be aware*
  - ✓ Be aware that flood risk management plans might be drafted in the national language and that therefore, national experts need to be involved.

## More information

- Directive 2007/60/EC of 23 October 2007 on the assessment and management of flood risks adopted by the European Parliament and of the Council [11]
- [http://ec.europa.eu/environment/water/water-framework/index\\_en.html](http://ec.europa.eu/environment/water/water-framework/index_en.html) [32]

## 5.8 Instruction 8: Base flood risk management plans on the principle of solidarity

### Source

Directive 2007/60/EC of 23 October 2007 on the assessment and management of flood risks adopted by the European Parliament and of the Council.

### Scope of application and level of bindingness

The measures are laid down in a directive and therefore apply to all EU Member States. However, as the measures are laid down in a directive, it means that the measures need to be transferred by each Member State into its own national law. This may lead to differences between the national regimes. Nevertheless, differences will occur on minor points, on the major points the regimes will be similar in all Member States.

### Content

The Directive is a specification of Directive 2000/60/EC [8] that requires Member States to develop river basin management plans for each river that falls within their jurisdiction. Aim of these river basin management plans is to ensure that good ecological and chemical status of rivers are achieved, hence that the overall water quality in all Member States improves. Although Member States have included measures to improve and maintain water quality, these plans only refer to flood mitigation in passing as it is not part of the core content of the Directive.

Directive 2007/60/EC therefore covers this issue and solely focuses on the assessment and management of flood risks. In order to manage potential flood risks, each Member State has to carry

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out several assessments and draft several plans for all water resources within its jurisdiction. The following activities are needed:

- Preliminary flood risk assessment (Articles 4 and 5);
- Flood hazard maps and flood risk maps (Article 6);
- Flood risk management plans (Articles 7 and 8).

Article 7.4 states that based on the solidarity principle Member States cannot take all measures that they want in case of cross-border water resources. Each Member State is obliged to consider the effects of its measures on countries up- or downstream. This implies that measures which could be very effective for country A, but which cause severe problems in country B, cannot be undertaken. In crisis management these potential negative impacts on countries up- or downstream should be considered as well.

#### Article 7.4: flood risk management plans

**In the interests of solidarity**, flood risk management plans established in one Member State shall not include measures which, by their extent and impact, significantly increase flood risks upstream or downstream of other countries in the same river basin or sub-basin, unless these measures have been coordinated and an agreed solution has been found among the Member States concerned in the framework of Article 8. [11]

### Applicability in crisis management

The measures laid down in the directive will mainly apply to the first phases of the crisis management cycle. Once an actual disaster occurs, the impact of this directive will be reduced, however the plans are available and first responders can obtain vital information for them which makes their CM activities more effective.

### Links with other tools, principles and regulations

This directive is a concrete example where the solidarity clause is made more explicit. Based on solidarity Member States cannot undertake all flood prevention measures they would like as they might cause negative effects on other countries.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The environmental impact expected is positive as more effective measures can be taken. As well the negative impact (and end-result) of the flooding itself can be reduced.
- *Affected environment?*
  - ✓ All environments are affected, however especially nature and human life will experience a positive effect of a thorough risk assessment.
- *Influence on crisis management?*
  - ✓ If the assessments are carried out and the management plans are drawn information on the potential risks and impacts of flooding are known. First responders can incorporate this information in their response plans and by doing this can ensure that their response

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becomes more effective as fewer information gaps exist and their efforts can be more targeted.

### Positive impacts and opportunities

The main impact of this directive and especially the Articles 4 – 8 is that the relevant authorities have conducted a flood risk assessment, which needs to be updated regularly. For each water resource a thorough indication of the flood risk and potential impacts are available. This means that counter measures can be taken in order to reduce the risks and impacts. Also critical information that might stimulate a proper response to an immediate crisis has become available and can be used.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Check what is included in the different flood risk management plans about upstream and downstream countries and the risks assessed.
  - ✓ Where possible include this information in your own response plans in order to ensure that the measures you take are in line with these plans.
- *Be aware*
  - ✓ The water resource might be cross-border and therefore your actions might affect not only the water in your own country, but also countries up- or downstream. In this case the principle of solidarity applies, which means you have to consider the possible effects of your measures on the neighbouring countries.
  - ✓ In case such effects are negative, try to use other measures (if available).
    - Assess the possibility beforehand.

### More information

- Directive 2007/60/EC of 23 October 2007 on the assessment and management of flood risks adopted by the European Parliament and of the Council [11]
- [http://ec.europa.eu/environment/water/water-framework/index\\_en.html](http://ec.europa.eu/environment/water/water-framework/index_en.html) [32]

## 5.9 Instruction 9: Implement major-accident prevention policies

### Source

Directive 2012/18/EU of 4 July 2012 on the control of major-accidents hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC adopted by the European Parliament and the Council.

### Scope of application and level of bindingness

The measures are laid down in a directive and therefore apply to all EU Member States. However, as the measures are laid down in a directive, it means that the measures need to be transferred by each Member State into its own national law. This may lead to differences between the national

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regimes. Nevertheless, differences will occur on minor points, on the major points the regimes will be similar in all Member States.

## Content

The directive provides rules regarding the prevention of major accidents involving hazardous materials. Each Member State has the obligation to ensure that the operators of sites (e.g. factories or certain storage facilities) which may cause major accidents, develop and implement a prevention policy. The rules specifically apply to operators of sites where hazardous substances are available. This directive aims to provide a high level of protection for both human health and the environment (Article 8).

### Article 8: Major-accident prevention policy

Member States shall require the operator to draw up a document in writing setting out the major-accident prevention policy (MAPP) and to ensure that it is properly implemented. The MAPP shall be designed to ensure **a high level of protection of human health and the environment**. It shall be proportionate to the major-accident hazards. It shall include the operator's **overall aims and principles of action**, the role and responsibility of management, as well as the commitment towards continuously improving the control of major-accident hazards, and ensuring a high level of protection.[13]

In addition to the prevention policy, some operators, the so-called up-tier operators<sup>15</sup>, do need to develop safety reports (Article 10). One of the aims is to indicate which measures have been adopted in order to limit the risk of the establishment itself and thereby to reduce the risk of a major accident. Beside the safety report, the operator also has to develop and provide input for emergency plans.

The operator contributes to two plans; the internal plan and the external plan. The internal plan needs to indicate which measures need to be taken in the establishment itself. The plan also needs to indicate which procedures on site apply, once an emergency occurs (Article 12.1a). The external plan is developed by the competent authorities (Article 12.1b) and details what response will be taken in case of an emergency. The operator is required to provide input for this plan.

## Applicability in crisis management

Most provisions laid down in the directive have a direct impact on the earlier crisis management phases, especially prevention and preparedness. The operators need to indicate and report on potential risks caused by their establishments and the measures they will take to reduce those risks.

Also emergency plans need to be in place, indicating which actions need to be taken once a disaster occurs. The latter plans are particularly important in the response phase as the emergency plans

<sup>15</sup> These operators have an up-tier establishment. According to Article 3.3 an “upper-tier establishment” means an establishment where dangerous substances are present in quantities equal to or in excess of the quantities listed in Annex I”. In other words in these establishments large quantities of dangerous substance’s are available which may lead to an increased risk on accidents.

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indicate what needs to be done in case of an emergency. If these plans are carefully followed-up in the response phase, the negative environmental impact of the disaster will be limited compared to a situation without such plans.

### Links with other tools, principles and regulations

The directive can be seen in connection with the 'Guidelines for Environmental Assessment following chemical emergencies' (Instruction 22). Based on the emergency plans it might become easier to assess the environmental impact once a chemical emergency materialises.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ As indicated above the expected environmental impact is positive, once the plans are carefully written down as well as followed during response activities. By doing so, the negative impact of the disaster itself can be diminished.
- *Affected environment?*
  - ✓ Especially nature and human health are affected by the measures (see Article 8) as the directive aims to provide a high level of protection for both human health and the environment.
- *Influence on crisis management?*
  - ✓ Crisis management activities will be positively influenced, as a thorough risk assessment for each establishment will have been carried out already, so possible risks and threats are known beforehand. Also for each up-tier establishment both an internal and external emergency plan is in place indicating what needs to be done when a disaster happens.

### Positive impacts and opportunities

If all policies and plans are in place, much information regarding the status quo and possible risks of dangerous sites is available. Based on the information more accurate response plans can be adopted. With (better) plans in place the risks for the first responders themselves can be reduced. Also the negative impact of the disaster on the environment can be diminished.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Check if a major-accident prevention policy is in place for the relevant establishment. If yes, what does it say?
  - ✓ Check if an internal emergency plan is in place. If yes, what does it say?
  - ✓ Check if an external emergency plan is in place. If yes, what does it say?
  - ✓ If needed include measures and other relevant information into your own procedures and response plans.
    - Please be aware that such plans are made locally, so for each individual site a plan needs to be in place. Each individual plan needs to be considered.
- *Be aware*

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- ✓ Situations might change before and during a disaster. Therefore, not all information included in the different plans might be relevant. A validation of information found needs to take place.
- ✓ Not all risks might have been expected (and therefore been analysed in the plan). Be aware that new risks might materialise during a disaster.

#### More information

- Directive 2012/18/EU of 4 July 2012 on the control of major-accidents hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC adopted by the European Parliament and the Council [13].

## 5.10 Instruction 10: Exempt first responders, under certain conditions, from environmental liability

### Source

Directive 2004/35/CE of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage, adopted by the European Parliament and the Council.

### Scope of application and level of bindingness

The measures are laid down in a directive and therefore apply to all EU Member States. However, as the measures are laid down in a directive, it means that the measures need to be transferred by each Member State into its own national law. This may lead to differences between the national regimes. Nevertheless, differences will occur on minor points, on the major points the regimes will be similar in all Member States.

### Content

The aim of the Directive is to establish a framework which aims to prevent and remedy environmental damage. This is done by introducing environmental liability. The liability is based on the polluter pays principle which means that the actor causing the environmental damage is also the one that needs to pay/compensate for damage (Article 1).

According to Article 3, the Directive applies to the following cases of environmental damage:

- Environmental damage caused by one of the enlisted activities or the immediate threat of one of these activities; or
- Damage to protected species and natural habitats caused by activities not enlisted in the Directive.

The Directive has a large scope. Often an actor causing damage to the environment can be held liable for their actions and shall compensate for damage caused by him/her. However, in some cases the

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actor causing the damage might not be held liable as is shown in Article 4.6. This article contains an exemption. According to this article, the actor damaging the environment, while responding to a natural disaster, cannot not be held liable for their actions at latter stage.

#### Article 4.6: Exemptions

This Directive shall not apply to activities the main purpose of which is to serve national defence or international security nor to activities the sole purpose of which is **to protect from natural disasters**.<sup>[9]</sup>

### Applicability in crisis management

The directive does not apply to damage caused in the direct aftermath of a crisis. If damage is caused as a result of mitigating measures taken by the actor, the actor cannot be held liable for the resulting damage. In case actors could be held liable, they might not be willing to respond to the crisis in the most effective way. Especially if they know beforehand that they will be held liable for potential damage caused during their response activities. However, this article does not give responders entire freedom either. They still are obliged to choose the least damaging measure available (i.e. the least of the two evils). If they do not, they can still be held liable.

In addition the exemption only refers to natural disaster (e.g. flooding, earth quakes) and not to man-made disasters. In these cases, it is most likely that the actor causing the man-made disaster will face environmental liability charges, e.g. the operator or owner of a chemical facility. Responders will most likely not face charges when causing additional damage while responding to the disasters, however in some case they might be held liable (in case of using disproportionate counter measures to combat the disaster).

### Links with other tools, principles and regulations

The directive implements one of the four environmental principles described in Chapter 3. Although in principle, this directive implements the polluter pays principle, this specific directive also contains some exemptions to it; in case of damage caused during response to a disaster.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The exemption might lead to a direct negative impact, as responders might cause damage to the environment, while fighting the crisis. This without paying for the damage caused. However, in such cases reducing the negative effects of the crisis is more important than preserving the environment, which is already damaged.
- *Affected environment?*
  - ✓ All environments can be affected by this directive.
- *Influence on crisis management?*
  - ✓ The exemption relieves responders of possible liability charges in case they cause damage, potentially strengthening their willingness to participate in the mission and increasing the effectiveness of their work. However, this article does not give them absolute freedom. In all cases, responders are obliged to use proportionate measures.

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### Positive impacts and opportunities

In case environmental damage is caused, someone can be held liable and can be forced to compensate for the damage done. The exemption to responders will still enable them to respond adequately.

### Checklist for DRIVER partners

- *Be aware*
  - ✓ Although the exemption exists, it should be kept in mind that actions taken need to be proportional (i.e. choose the least damaging counter measure).
  - ✓ After the disaster it is still possible to be held liable, if it can be proven that disproportionate measures were taken. Especially, when less damaging measures were also available.

### More information

- Directive 2004/35/CE of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage, adopted by the European Parliament and the Council [9].

## 5.11 Instruction 11: Focus on local resources when providing aid

### Source

The European Consensus on humanitarian aid – the humanitarian challenges (2007)

A Joint Statement by the Council and the Representatives of the Governments of the Member States meeting within the Council, the European Parliament and the European Commission.

### Scope of application and level of bindingness

The European Consensus on humanitarian aid (hereinafter the Humanitarian Consensus) is a non-binding policy framework [41]. Therefore, the provisions adopted in the Consensus can be seen as guidelines which should be respected, while providing humanitarian aid. In case a European organisation or Member State violates one of the provisions, the offender cannot be sanctioned before a court. However, by agreeing to the Statement, the EU institutions and Member States are, in principal, morally bound by them and violation one of the provisions will not be accepted lightly. However, it should be noted that this Joint Statement only applies to aid provided outside the EU.

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The first relevant provision is provision 35 which indicates that aid provided should draw on local/regional resources as much as possible. By doing so, the negative environmental impact of providing aid can be reduced (e.g. less long distance transport needed). The provision indicates this can be relevant for providing food aid. It is preferred to provide locally produced food instead of shipping it from far away.

#### Provision 35

Whenever possible, without unduly disrupting markets, **aid including food aid**, should draw on local and regional resources and procurements. Drawing on such resources and procurements **not only avoids additional environmental and financial costs**, but also involves local capacities and promotes the local and regional economy. Innovative modalities for aid delivery, including non-commodity based approaches (such as cash and vouchers), should also be considered.[23]

### Applicability in crisis management

The Humanitarian Consensus applies to all phases of crisis management. Provision 35 mainly applies during the immediate aftermath and recovery after a crisis.

### Links with other tools, principles and regulations

Provision 35 is a concrete example of the broader principle of environmental protection. For instance, the provision is linked to the European Charter, which indicates that environmental protection needs to be considered in all EU policies. It should be noted that provision 35 will not apply to the modules (see Instruction 6) as the modules are only used in providing aid within the EU, while Provision 35 focuses on aid provision outside. In addition, Provision 35 firstly focuses on the provision of food aid to the local community.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ This provision aims to reduce the negative environmental impact of aid provision where possible. This provision specifically aims to reduce impacts of long distance transport. Therefore, the expected impact on the environment is positive.
- *Affected environment?*
  - ✓ This specific provision affects all different environments, so human health, nature and to a lesser extent the built environment.
- *Influence on crisis management?*
  - ✓ This provision stimulates the use of local resources where possible. In case it is not possible to provide the aid using local or regional resources, the aid will still be provided as providing aid itself is more important than using local resources. Then a negative impact on the environment can be expected.

### Positive impacts and opportunities

By considering this provision the focus will be on providing aid using local resources. The negative impacts of, for instance, long-distance transport will be reduced and the negative environmental

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impacts of the aid provision itself will be reduced as a consequence. The overall negative impacts of the disasters will therefore be diminished.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Try to use as many local or regional resources as possible instead of bringing all the resources from your own country or field of operation.
  - ✓ Use local capacities while providing the aid.
- *Be aware*
  - ✓ It will not always be possible to use local resources when providing aid. This could be caused a lack of resources as a direct result of the crisis (critical infrastructure is destroyed) or a general lack of capabilities (the area never had the resources needed). In such cases providing the necessary aid is more important and the resources should be brought in from abroad.

### More information

- The European Consensus on humanitarian aid – the humanitarian challenges [23]

## 5.12 Instruction 12: Do no harm

### Source

The European Consensus on humanitarian aid – the humanitarian challenges (2007)

A Joint Statement by the Council and the Representatives of the Governments of the Member States meeting within the Council, the European Parliament and the European Commission.

### Scope of application and level of bindingness

The European Consensus on humanitarian aid (hereinafter the Humanitarian Consensus) is a non-binding policy framework [41]. Therefore, the provisions adopted in the Consensus can be seen as guidelines which should be respected, while providing humanitarian aid. In case a European organisation or Member State violates one of the provisions, the offender cannot be sanctioned before a court. However, by agreeing to the Statement, the EU institutions and Member States are, in principal, morally bound by them and violation one of the provisions will not be accepted lightly. However, it should be noted that this Joint Statement only applies to aid provided outside the EU.

### Content

Also relevant for crisis management is provision 42. Although the provision is broadly defined and refers to the 'do no harm principle' in general, the provision also refers to possible long term environmental impacts in particular. This means that environmental impacts need to be considered

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at all times during the crisis management cycle. Even during the direct aftermath of a crisis the effects on the environment need to be considered as much as possible.

#### Provision 42

Policies in the different sectorial areas of humanitarian aid intervention, such as health, nutrition, water and sanitation, livelihood support and protection, must be adapted to context and to recipients in order to have maximum impact. **The “do no harm principle”** is the minimum requirement underlying such policies and aid approaches, which also **means that environmental and other longer-term considerations must be taken into account** from the outset even in short-term emergency interventions.[23]

### Applicability in crisis management

Provision 42 applies to all phases of crisis management. The ‘do no harm principle’ applies not only to the response and recovery phase of a crisis, but also needs to be used during the preparedness of potential aid programs. During all these phases the impact, of aid provision on the environment needs to be considered.

### Links with other tools, principles and regulations

This provision, is a more concrete example of the broader formulated environmental provisions adopted by the EU. Compared to provision 35, this provision is formulated more broadly and less concrete guidance is given. It is also a concrete elaboration of the precautionary principle as described in Chapter 3.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ By adopting the ‘do no harm principle’ and the explicit reference to minimizing the environmental impact, it is expected that the overall impact on the environment will be positive. This provision aims to reduce the negative environmental impact.
- *Affected environment?*
  - ✓ This specific provision affects all different environments, so human health, nature and the built environment are affected.
- *Influence on crisis management?*
  - ✓ The provision might limit crisis management as not all tools/methods used, might be in line with the ‘do no harm principle’. For each crisis management activity a motivated choice should be made whether or not the tool is in line with this principle.

### Positive impacts and opportunities

Using the ‘do no harm principle’ will encourage more environmentally friendly aid provision. Tools and methods that are not in line with this principle will be used less and after a certain period of time will hopefully not be used anymore.

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## Checklist for DRIVER partners

- *Do's*
  - ✓ Adopt the 'do no harm principle' as much as possible during all phases of crisis management.
- *Be aware*
  - ✓ It will not always be possible to follow the 'do no harm principle' as some crisis situations might require drastic measures. In such situations it might be necessary to use such a measure; however a thoroughly motivated choice needs to be made for that particular tool or measure. It should be noted that the drastic measures really needs to be the last resort possible.

## More information

- The European Consensus on humanitarian aid – the humanitarian challenges [23]

## 5.13 Instruction 13: Provide aid taking into account immediate and long term environmental impacts

### Source

The European Consensus on humanitarian aid – the humanitarian challenges (2007)

A Joint Statement by the Council and the Representatives of the Governments of the Member States meeting within the Council, the European Parliament and the European Commission.

### Scope of application and level of bindingness

The European Consensus on humanitarian aid (hereinafter the Humanitarian Consensus) is a non-binding policy framework [41]. Therefore, the provisions adopted in the Consensus can be seen as guidelines which should be respected, while providing humanitarian aid. In case a European organisation or Member State violates one of the provisions, the offender cannot be sanctioned before a court. However, by agreeing to the Statement, the EU institutions and Member States are, in principal, morally bound by them and violation of one of the provisions will not be accepted lightly. However, it should be noted that this Joint Statement only applies to aid provided outside the EU.

### Content

In the annex of the Humanitarian Consensus a list of principles based on the OECD-DAC has been included. Two out of the eight principles concern environmental impact in relation to crisis management. The first principle indicates that all aid provided should take into account the immediate and long term impacts of aid on the environment. By adding the immediate impacts to the definition of this principle, this principle is broader than the one used for the 'do no harm' principle.

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***Aid should be provided in a manner that takes account of*** the complexity and variety of human vulnerabilities and should include cross cutting issues such as gender and ***immediate and longer term impact on the environment***. The needs of men are not identical to those of women. Nor are the rights and needs of children the same as those of an adolescent or an adult. Similarly, specific ethnic or religious groups may require particular approaches, considerations and sensitivities, regarding e.g. the type of food provided for their consumption. (→ OECD-DAC criteria of appropriateness and relevance) [23]

### Applicability in crisis management

Although this instruction affects all phases of crisis management, the focus is on the response and recovery phases. During these phases actual aid will be provided. When providing such aid it is vital to consider the impacts of aid on the environment. As indicated above the scope of this instruction is boarder than that of provision 42, as it also relates to the immediate impact on the environment.

### Links with other tools, principles and regulations

This provision is also a more concrete example of the broader formulated environmental provisions adopted by the EU. This instruction is also closely link to the precautionary principle.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The expected impact is positive as this instruction urges all organisations to consider the immediate and long term environmental impacts and minimize the negative impacts where possible.
- *Affected environment?*
  - ✓ This specific provision affects all different environments, so human health, nature and the built environment.
- *Influence on crisis management?*
  - ✓ The provision might limit crisis management as not all tools/methods used might be in line with the precautionary principle. For each crisis management activity a motivated choice should be made whether or not the tool is in line with this instruction.

### Positive impacts and opportunities

The instruction encourages aid providers to consider the immediate and long term impacts of their actions on the environment. Although they cannot be held accountable when the impact is negative (as the Humanitarian Consensus is not binding), they will be made aware of it before springing into action.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Carefully consider this instruction when undertaking crisis management activities.

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## More information

- The European Consensus on humanitarian aid – the humanitarian challenges [23]

## 5.14 Instruction 14: Include environmental development in emergency relief

### Source

The European Consensus on humanitarian aid – the humanitarian challenges (2007)

A Joint Statement by the Council and the Representatives of the Governments of the Member States meeting within the Council, the European Parliament and the European Commission.

### Scope of application and level of bindingness

The European Consensus on humanitarian aid (hereinafter the Humanitarian Consensus) is a non-binding policy framework [41]. Therefore, the provisions adopted in the Consensus can be seen as guidelines which should be respected, while providing humanitarian aid. In case a European organisation or Member State violates one of the provisions, the offender cannot be sanctioned before a court. However, by agreeing to the Statement, the EU institutions and Member States are, in principal, morally bound by them and violation of one of the provisions will not be accepted lightly. However, it should be noted that this Joint Statement only applies to aid provided outside the EU.

### Content

The second relevant principle included in the Annex, indicates that although immediate saving of lives and sustaining needs are an absolute priority, emergency relief should amongst others focus on environmental development on the longer term. This implies that during the immediate response to disasters not all measures can be taken, as they might harm the future development of the environment. Such measures can only be taken when they are a last resort. If other, less damaging, measures are still available these should be used first.

While immediate life-saving and sustaining needs are an absolute priority, **emergency relief should be a solid foundation for** longer term human development, **including** cultural and **environmental development**. Longer term planning and coordination with developmental donors is needed to achieve integrated programmes that will link emergency programmes with middle term programmes, in particular rehabilitation, reconstruction and developmental programmes. This should aim to assist populations re-establish and strengthen their own traditional coping mechanisms. [23]

### Applicability in crisis management

This instruction mainly applies to the phases of response and recovery. To a lesser extent this instruction will apply to the other crisis management phases, e.g. the preparedness.

### Links with other tools, principles and regulations

Although not explicitly indicated, this instruction could be seen as an elaboration of both the precautionary principle and the environmental sustainability principle.

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## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The expected environmental impact is positive, as less damaging measures will be taken to respond to a disaster.
- *Affected environment?*
  - ✓ All environmental aspects are affected by this instruction.
- *Influence on crisis management?*
  - ✓ Based on this instruction not all crisis management activities can be carried out. For each tool or method that will be used an assessment needs to be determined to determine the potential environmental impact. If the tool or method has a negative impact, this tool or method should not be used. It can only be used as a last resort.

## Positive impacts and opportunities

The instruction encourages aid providers to consider the immediate and long term impacts of their actions on the environment. Although they cannot be held accountable when the impact is negative (as the Humanitarian Consensus is not binding), they will be made aware of it before springing into action.

## Checklist for DRIVER partners

- *Do's*
  - ✓ Carefully consider this instruction when undertaking crisis management activities.

## More information

- The European Consensus on humanitarian aid – the humanitarian challenges [23]

## 5.15 Instruction 15: Deprive no one of his/her means of subsistence

### Source

International Covenant on Civil and Political Rights (ICCPR) which was adopted in 1966 by the Members of the United Nations [16].

### Scope of application and level of bindingness

The ICCPR is the human rights convention in place. As the figure below shows 168 countries have signed and ratified this convention. Another seven have signed, but not ratified with China being the most important one of this latter category. All EU Member States are party to this convention. An overview of the ratification status of the Convention is depicted in the map below (with dark blue being 'state party', middle blue being 'signatory') and orange being 'no action'). [40]

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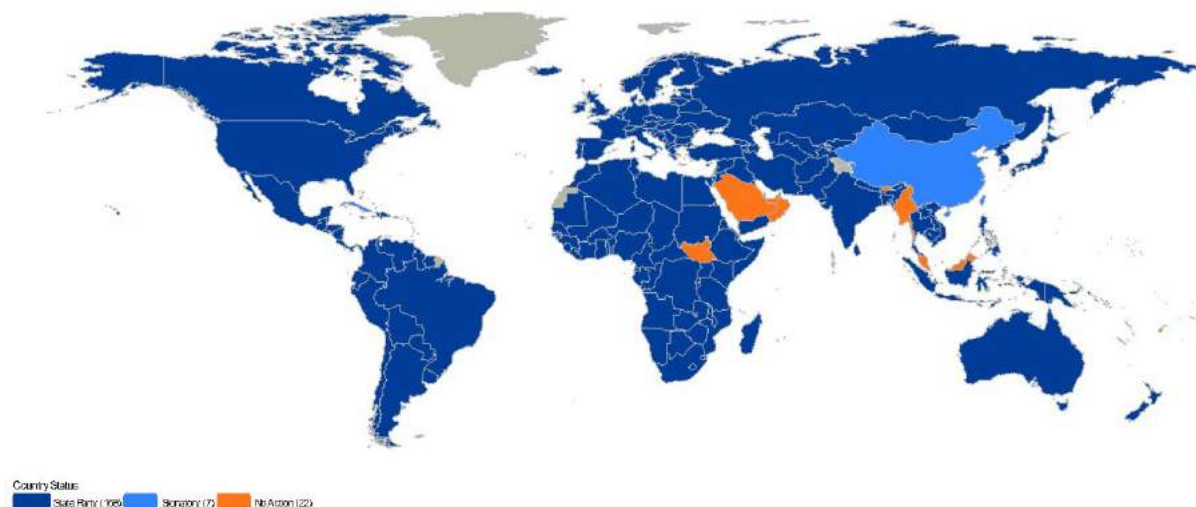


Figure 4: Implementation of the ICCPR world wide

Source: United Nations Human Rights office of the High Commissioner [42]

The convention writes down all basic human rights, ranging from the right the life (Article 6), equal rights for men and women (Article 3) and the prohibition of slavery and servitude (Article 8). With the ratification of this convention basic human rights got a vital place in daily life and the protection of it. [42]

## Content

The convention does not contain an explicit article indicating that the human environment should be protected. It should be noted that based on this convention more detailed declarations have been adopted, which do focus on environmental protection. However, an important article, which slightly touches upon environmental protection, is Article 1.2 of the ICCPR. This article lays down the right of every human being to freely use natural wealth and resources for its own means. The article is addressing States. States cannot deviate from this article and need to ensure the self-determination of their subjects. It also states that States are not allowed to deprive their people of their means of subsistence.

### Article 1.2: Right to own means of subsistence<sup>16</sup>

All peoples may, for their own ends, freely dispose of their natural wealth and resources without prejudice to any obligations arising out of international economic co-operation, based upon the principle of mutual benefit, and international law. ***In no case may a people be deprived of its own means of subsistence.*** [42]

In case of crisis management activities this principle should be kept in mind, especially by States. It is possible that as a result of the disaster itself the means of subsistence are to a certain extent

<sup>16</sup> The article does not have an official name. The name presented is given by the authors of this report.

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destroyed. In order not to further weaken the position of the disaster victims, crisis responders acting on behalf of the government, should ensure that no additional damage to the environment is done. So when carrying out crisis management activities, it should be kept in mind that the affected people should still have the chance to build a new life once the impacts of the disaster have subdued. They should not be left in an area, where living conditions are entirely impossible.

### Applicability in crisis management

This article will apply to all phases of the crisis management cycle, but will become very apparent in the response and recovery phase. During all activities it should be kept in mind that it is a fundamental human right for people to have one's own means of subsistence.

### Links with other tools, principles and regulations

As indicated above many additional convention and declarations are based on the ICCPR. In the area of environmental protection and sustainability two good examples are the Stockholm Declaration (Instructions 17 - 18) and the Rio Declaration (Instructions 19 - 21) which build upon Article 1.2 ICCPR.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ In case this instruction is not followed the environment can be damaged in a substantial way. It should be avoided that people are no longer able to live in their area of residence as a result of crisis management activities.
- *Affected environment?*
  - ✓ All environments will be affected; however both human health and nature are more affected than the built environment.
- *Influence on crisis management?*
  - ✓ This article may pose some restrictions on crisis management activities. Before providing aid a well-motivated decision needs to be made and the positive and negative impacts on people's livelihood should be made. No all measures will be allowed.

### Positive impacts and opportunities

By considering the article sufficiently the potential damage done by responding to a crisis can be diminished. In the end this will lead to a less damaged environment and an earlier opportunity for recovery, leading to a better quality of life (i.e. the most desired outcome).

### Checklist for DRIVER partners

- *Do's*
  - ✓ Consider carefully to impacts of your response action on the environment. In case irreparable damage will be caused which reduced the opportunities of the people saved, don't use this measure.

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- *Be aware*
  - ✓ In case you seriously violate this basic human right, the victims could bring you to justice.

### More information

- ✓ <http://www.ohchr.org/en/professionalinterest/pages/ccpr.aspx> [42]

## 5.16 Instruction 16: Derogation in case of public emergency

### Source

International Covenant on Civil and Political Rights (ICCPR) which was adopted in 1966 by the Members of the United Nations [16].

### Scope of application and level of bindingness

The ICCPR is the human rights convention in place. The convention has been ratified by 168 countries. The Convention lays down the basic human rights, which are respected in most countries of the world. With the ratification of this convention basic human rights got a vital place in daily live and the protection of it. [42]

### Content

Article 4.1 in relation to Article 4.2 is important in case of a large disaster, especially for high-level policy makers. The article gives nations the possibility to deviate from certain human rights in case of public emergencies that threaten the life of the nation (large parts of/or all citizens). To invoke this right, nations have to officially proclaim the existence of the disaster and call in a state of emergency. In Article 4.2 an overview of articles of the ICCPR is presented from which derogation is not possible. Article 1.2 (described above) is not included in the list and therefore in case of a public emergency it is possible that people cannot invoke the right not to be deprived of a means of subsistence.

#### Article 4.1: derogation in case of public emergency<sup>17</sup>

*In time of public emergency which threatens the life of the nation* and the existence of which is officially proclaimed, the States Parties to the present Covenant *may take measures derogating from their obligations* under the present Covenant to the extent strictly required by the exigencies of the situation, provided that such measures are not inconsistent with their other obligations under international law and do not involve discrimination solely on the ground of race, colour, sex, language, religion or social origin. [42]

The above presented conclusion should be treated with the greatest care possible. People are still entitled to food, water and health care. These rights will not be taken from them, but Article 4.1 ICCPR might allow the usage of measures that might cause irreversible damage to their direct livelihood. Especially, when the measure is able to save human life, this will be seen as a valid argument to cause more damage to the environment, than doing nothing.

<sup>17</sup> The article does not have an official name. The name presented is given by the authors of this report.

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## Applicability in crisis management

This article is explicitly written for situations where a nation is in crisis and the life of the nation is at stake. It should be kept in mind that this applies to the largest disasters imaginable, e.g. extremely large floodings, tornados or chemical disasters. In such cases, a nation might decide to invoke this article in order to be able to manage the crisis and in the end save lives. Under this article it is also possible to temporarily refuse the right to freedom of choice of residence. People can be forced to live somewhere else if this would help to solve the crisis. It allows for compulsory evacuation.

## Links with other tools, principles and regulations

As indicated some of the articles of the ICCPR can be set aside. Articles that cannot be set aside are:

- Article 6: right to life;
- Article 7: prohibition on torture and cruel, inhuman or degrading punishment;
- Article 8, par. 1 and 2: prohibition of slavery and servitude;
- Article 11: prohibition on the use of imprisonment as a punishment for breach of contract;
- Article 15: no punishment without a law;
- Article 16: to right to recognize everyone before the law;
- Article 18: freedom of religion.

All other articles of the ICCPR might be set aside temporarily. It will provide room to respond to a crisis, but the situation should not last longer than absolutely necessary.

In many countries special law is adopted that will come into force once the state of emergency is declared. In these special laws the government obtains a temporary extension of it powers in order to sufficiently combat the disaster. Such laws are based on the ICCPR principle.

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ If the article is invoked it might allow for more extreme measures to combat the disaster. These measures might not always have a positive effect on the environment, so it could be very well possible that human life is saved, but nature is damaged. In such cases the environmental impact is negative.
- *Affected environment?*
  - ✓ All environments might be affected.
- *Influence on crisis management?*
  - ✓ In severe disasters it might provide crisis managers the room needed to reduce the impacts of the disasters. However, the article should be treated with the greatest possible caution.

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## Positive impacts and opportunities

It is difficult to identify positive impacts and opportunities. Main lesson of this article is that saving human lives should have the priority and will proceed over the protection of the environment, in case of great disasters.

## Checklist for DRIVER partners

- *Do's*
  - ✓ If it is absolutely necessary to invoke this article, ensure that it will be invoked for the minimum amount of time possible, because fundamental human rights do not apply and their non-application is non-desirable.
- *Be aware*
  - ✓ Do not unnecessarily invoke this article. Be aware that invoking this article is a last resort and should be avoided for as long as possible.
  - ✓ Be aware that, with invoking this article, basic human rights might no longer apply. This is an unwanted situation, which asks for the soonest repair.

## More information

- ✓ <http://www.ohchr.org/en/professionalinterest/pages/ccpr.aspx> [42]

## 5.17 Instruction 17: Respect the fundamental right to life in an environment of quality

### Source

Declaration of the United Nations Conference on the Human Environment – Stockholm 1972

### Scope of application and level of bindingness

In general, the Stockholm Declaration is seen as an advisory statement of purpose [55], meaning that countries who adopted this Declaration are advised to use the principles laid down in the Declaration. This Declaration therefore is considered to be soft law (compared to hard law) and is not legally binding. Countries that do not fulfil the obligations of this Declaration do not face charges.

### Content in general

Main aim of the Stockholm Declaration is to increase environmental awareness among the different parties and stresses the important relation between economic development and environmental protection. The Declaration links the environment with human rights and conceptualises that environmental protection and development are two sides of the same coin which influence one another, both positively and negatively [49]. Countries are urged to, while focusing on their economic growth, also consider the environment, including wild-life (Principle 4 of the Stockholm Declaration).

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Developing countries need to direct their efforts to development, bearing in mind their priorities and the need to safeguard and improve the environment. At the same time developed countries should make the necessary efforts to reduce the gap between them and developing countries (Proclamation 4 of the Stockholm Declaration).

## Content

Although principle 1 of the Stockholm Declaration is broadly formulated, it envisages the ultimate end-goal, laying down the fundamental right of each human being to live in an environment that permits a life of dignity and well-being. This means that the environmental conditions as such should allow people to not be at an immediate risk of losing their life, get injured or be evicted from their homes. Environment in the sense of principle 1 of the Declaration needs to be explained broadly; it refers to nature, human health and the built environment. It even goes further and urges all States party to the Declaration that people are among others not victim of any armed conflicts or discrimination for whatever reason.

### Principle 1: Fundamental right to life in an environment of quality<sup>18</sup>

*Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this respect, policies promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression and foreign domination stand condemned and must be eliminated.*  
[7]

## Applicability in crisis management

As indicated above principle 1 of the Stockholm Declaration is broadly formulated and can be seen as the ultimate goal. In relation to crisis management this means that every action taken in all phases of crisis management should bear in mind that in the end people have the fundamental right to live in an environment that permits a dignified life. The most concrete phase is recovery where all actions taken, need to consider that the people living in the affected area should be able to live a good after the crisis.

## Links with other tools, principles and regulations

This instruction could be seen as a deepening of Article 1.2 from the ICCPR. This instruction specifically lays down how the right of man to his own means of subsistence can be realized. Also, many EU regulations can be read in close connection to this instruction.

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ If the instruction is followed the impact on the environment should be positive.
- *Affected environment?*

<sup>18</sup> The article does not have an official name. The name presented is given by the authors of this report.

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- ✓ All environments are affected.
- *Influence on crisis management?*
  - ✓ During all phases of crisis management this instruction should be considered. If measures taken will destroy the livelihood of many people and deprive them from a worthy life such measures should not be taken.

### Positive impacts and opportunities

As indicated above compliance with this instruction before, during and after a disaster will lead to a better environmental quality. The less damage is caused to the environment, the less mitigating measures have to be taken. Likely end-result is a healthier environment (in all possible ways).

### Checklist for DRIVER partners

- *Do's*
  - ✓ Consider the impact of your measures on the environment and the livelihood of the people you are willing to help.
- *Be aware*
  - ✓ Do not take measures that will affect the livelihood of people, especially when such measures cause irreversible negative impacts.

### More information

- Declaration of the United Nations Conference on the Human Environment – Stockholm 1972 [7]
- Handl, G. (2012), 'Declaration of the United Nations Conference on the Human Environment 1972 and The Rio Declaration on Environment and Development, 1992 [50].

## 5.18 Instruction 18: Plan human settlements and urbanization respecting the environment

### Source

Declaration of the United Nations Conference on the Human Environment – Stockholm 1972

### Scope of application and level of bindingness

In general the Stockholm Declaration is seen as an advisory statement of purpose [55], meaning that countries who adopted this Declaration are advised to use the principles laid down in the Declaration. This Declaration therefore is considered to be soft law (compared to hard law) and is not legally binding. Countries that do not fulfil the obligations of this Declaration do not face charges.

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## Content

Principle 15 of the Stockholm Declaration states that in planning human settlements and urbanisation, the effects of such settlements on the environment need to be considered. In addition, negative effects should be avoided as much as possible. In Europe it is unlikely that entirely new settlements will be established and also urbanisation is more advanced than in other parts of the world. However, this principle urges EU Member States to consider, when planning new parts of cities, the impact their developments will have on the environment. It also urges them to avoid negative effects on the environment as much as possible.

### Principle 15: Planning of human settlements and urbanisation<sup>19</sup>

*Planning must be applied to human settlements and urbanization with a view to avoiding adverse effects on the environment* and obtaining maximum social, economic and environmental benefits for all. In this respect projects which are designed for colonialist and racist domination must be abandoned. [7]

## Applicability in crisis management

Principle 15 of the Stockholm Declaration will play an important role, both in normal situation and crisis situations. First of all, this instruction applies to the prevention and preparedness phases. If the instruction is carefully considered, while expanding cities or other urban developments, the likelihood of triggering a disaster is reduced.

Secondly, this instruction is important in case a large, destructive disaster happens and entire communities are reduced as a result. Examples could be severe flooding and storms. As results of such disasters large urban areas can become uninhabitable and need to be re-developed in order to enable citizens to live their again. In such cases, it is advisable to carefully consider the impact on the environment while revitalizing the urban areas.

## Links with other tools, principles and regulations

-

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ If policy-makers consider this instruction carefully, they will be able to reduce the risks of man-made and natural disasters. By reducing the risks of such disasters the environmental impact will improve overall.
- *Affected environment?*
  - ✓ All environments are affected; however the most affected one is nature.
- *Influence on crisis management?*
  - ✓ Especially in the recovery phase this instruction becomes important, as this phase provides the opportunity to reduce the risk on future disasters. Applying this instruction in the prevention and preparedness phase is also positive.

<sup>19</sup> The article does not have an official name. The name presented is given by the authors of this report.

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### Positive impacts and opportunities

If the instruction, it is carefully considered while developing urban areas, the changes on environmental disasters and the negative impacts on all three types of environment can be diminished beforehand. Overall this will result in a better quality of life.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Consider this instruction while planning urban developments. The more carefully the impact of urbanisation on the environment is considered, the better the adverse impacts on the environment can be mitigated.
  - ✓ Overall it will reduce the risk of a man-made or natural disaster.

### More information

- Declaration of the United Nations Conference on the Human Environment – Stockholm 1972 [7]
- Handl, G. (2012), 'Declaration of the United Nations Conference on the Human Environment 1972 and The Rio Declaration on Environment and Development, 1992 [50].

## 5.19 Instruction 19: Adopt effective environmental legislation

### Source

Rio Declaration on Environment and Development – Rio de Janeiro 1992

### Scope of application and level of bindingness

The Rio Declaration is, similar to the Stockholm Declaration, not a binding legal instrument. The Declaration can best be seen as an advisory statement of purpose of the different countries to be more focused on the environment and development as well as the inter-linkages between them [44].

### Content in general

The Rio Declaration was adopted 20 years after the Stockholm Declaration. Where the Stockholm Declaration was more general, the Rio Declaration contains more specific directions for environmental protection and sustainable development. Also in this Declaration environmental protection and economic development are seen as two sides of the same coin. This view is laid down in principle 4 of the Rio Declaration : *'in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.'* [18]

The Declaration also indicates that in order to protect the environment all States should be involved. According to principle 7: *'states shall cooperate in a spirit of global partnership to conserve, protect*

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*and restore health and integrity of the Earth's ecosystem.'* [18] Although not mentioned explicitly, this also means that in case of crisis management activities one should be aware of these principles and should ensure that no additional damage is caused to areas that are already affected as a result of a disaster.

## Content

The Rio Declaration explicitly encourages of participating countries to introduce environmental legislation. This legislation should aim to, at least, maintain the current environmental quality, but preferably improve the quality of the environment. The environmental legislation is closely linked to development in general. Both the Stockholm and Rio Declarations envisage clear link between the environment and the development. Both declarations assume that one will influence the other (both positively and negatively).

### Principle 11: obligation for effective environmental legislation<sup>20</sup>

States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and development context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries. [18]

Principle 11 of the Rio Declaration can be read in close connection with principle 10 of the same declaration. Principle 10 assumes that environmental issues can best be dealt with by involving the population. Therefore, all citizens are entitled to sufficient information regarding environmental topics in their own country. Introducing effective legislation is a first step into this desired direction. With a proper legal framework in place, it will also become easier for citizens to participate in this process and they can be made more aware of the environment.

It should be noted that environmental legislation does not have to be similar in all countries. Based on the situation in a specific country, specific legislation can be adopted. Implicitly principle 11 of the Rio Declaration also assumes that developed countries need more extensive legislation than developing countries as their impacts on the environment, especially their effect on developing countries, might be higher.

## Applicability in crisis management

This instruction will not directly influence crisis management as the instruction is more a universal principle asking countries to adopt environmental legislation. However, by obliging to this instruction, crisis management is influenced implicitly. If a better environment legal framework is in place, which focuses on the environmental protection and sustainable development, the risk on a disaster can be reduced. In case a disaster materialises, the impact might be less due to more preventative measures.

<sup>20</sup> The article does not have an official name. The name presented is given by the authors of this report.

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## Links with other tools, principles and regulations

This instruction forms the basis for all environmental legislation. So, all other rules and principles presented in the analysis originate from this general obligation of enacting effective environmental legislation. The instruction also assumes that the more and better legislation is in place, the better the environment will be protected.

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ By encouraging for countries to adopt environmental legislation, there is a strong international basis to ensure that all countries have at least some legislation in place. As an end-result, the environment should be protected better worldwide.
- *Affected environment?*
  - ✓ In principle environments will be protected, however the main focus is likely to be on nature.
- *Influence on crisis management?*
  - ✓ As indicated there is no direct link between this instruction and crisis management.

## Positive impacts and opportunities

If countries carefully follow the instruction, they have the opportunity of creating a coherent legal framework which on the one hand will protect the environment and on the other hand enables sustainable development. The risks on both natural and man-made disaster can be reduced.

## Checklist for DRIVER partners

- *Do's*
  - ✓ Each country needs to ensure that effective environmental legislation is in place.
- *Be aware*
  - ✓ The adopted legislation might differ per country as the instruction allows for different rules based on the specific context in a country. Especially in less developed countries, fewer rules might apply. However this does not mean that responders helping out there, are allowed to cause more damage than somewhere where the rules are more strict.

## More information

- Rio Declaration on Environment and Development – Rio de Janeiro 1992 [18]
- Handl, G. (2012), 'Declaration of the United Nations Conference on the Human Environment 1972 and The Rio Declaration on Environment and Development, 1992 [50].

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## 5.20 Instruction 20: Develop national law regarding liability and compensation for the victims

### Source

Rio Declaration on Environment and Development – Rio de Janeiro 1992

### Scope of application and level of bindingness

The Rio Declaration is, similar to the Stockholm Declaration, not a binding legal instrument. The Declaration can best be seen as an advisory statement of purpose of the different countries to be more focused on the environment and development as well as the inter-linkages between them [44].

### Content

Principle 13 of the Rio Declaration encourages participating States. Each State is obliged to introduce rules regarding liability and compensation possibilities under its national legal system. Victims of pollution or other environmental damage should be able to find recognition and compensation for their suffering. The principle does not stipulate who should be held responsible; only the State or also individuals. This leaves some room for the national authorities; however it is likely, that individuals causing pollution or other damage can be held liable as well.

#### Principle 13: Liability and compensation clause<sup>21</sup>

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control areas beyond their jurisdiction.[18]

The principle also lies down that national authorities can be held liable for adverse effects of environmental damage, e.g. wrong crisis management activities which increase the negative environmental damage. The national authorities are liable within their jurisdiction as well as in areas which are controlled by their jurisdiction.

Overall, the principle aims to ensure that victims of pollution or other environmental causalities can seek recognition and compensation. Victims do not have to carry the damage caused to them.

### Applicability in crisis management

This instruction will play a role in crisis management implicitly. First of all, the instruction indicates that countries need to ensure that victims find recognition and can be compensated. Although not explicitly laid down, the instruction also indicates that States can be held liable for adverse effects of environmental damage. This could relate to crisis management activities in the response and

<sup>21</sup> The article does not have an official name. The name presented is given by the authors of this report.

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recovery phase. If damaging CM tools are used, which cause additional damage to the environment, the authorities could be held liable for it.

Although an impact can be expected, it is difficult to assess the exact size of it as the legislation adopted in each country might be different. To find the exact scope a nation by nation study should be conducted (which lies outside the scope of this analysis).

### Links with other tools, principles and regulations

Implementation of principle 13 of the Rio Declaration can be found in the Directive on environmental liability (see instruction 10). As indicated before, this directive ensures that polluters are held liable for their actions and need to compensate for them. However, an exemption for disasters has been introduced. As the rules are laid down in a directive each Member State will have transposed the rules into their national legal system.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ This instruction will not have a direct effect on environmental protection, as the instruction is merely reactive. However, a compensation obligation is introduced so once the environment is damaged, someone can be held liable and needs to pay for the damage caused.
- *Affected environment?*
  - ✓ The instruction refers to nature.
- *Influence on crisis management?*
  - ✓ Crisis management is, overall, not directly influenced by the instruction. However, it is advisable that crisis managers are aware of the instruction and its possible implications.

### Positive impacts and opportunities

Once the environment has been damaged the instruction allows for compensation. The damage done does not become a problem for the population, but certain individuals can be held accountable. They are also the ones that should compensate for the damage done. The instruction aims to make individuals more aware of possible negative consequences of their behaviour.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Each country should have legislation in place concerning liability and compensation.
- *Be aware*
  - ✓ Legislation might differ per country, so check for each country what the specific rules are.

### More information

- Rio Declaration on Environment and Development – Rio de Janeiro 1992 [18]

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- Handl, G. (2012), 'Declaration of the United Nations Conference on the Human Environment 1972 and The Rio Declaration on Environment and Development, 1992 [50].

## 5.21 Instruction 21: Notify other potentially affected States immediately of any natural disaster

### Source

Rio Declaration on Environment and Development – Rio de Janeiro 1992

### Scope of application and level of bindingness

The Rio Declaration is, similar to the Stockholm Declaration, not a binding legal instrument. The Declaration can best be seen as an advisory statement of purpose of the different countries to be more focused on the environment and development as well as the inter-linkages between them [44].

### Content

In case of a natural disaster or another emergency, e.g. man-made disaster, the State affected should immediately warn States that might be affected as well. Often this will be neighbouring countries. By warning these countries immediately, they can take the necessary measure to avoid or mitigate the effects of the disaster in the other country.

#### Principle 18: Notification<sup>22</sup>

States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted. [18]

In addition, this principle indicates that a country in distress needs to be helped by the international community. So if a country is hit by an earthquake, other countries are obliged to help this affected country. The help given can relate to many different areas and will differ per disaster.

### Applicability in crisis management

This instruction mainly applies once a disaster has materialised and therefore mainly applies in the response and recovery phase of crisis management.

### Links with other tools, principles and regulations

This instruction is closely linked to one of the basic principles of the European Union, i.e. the solidarity clause (see instruction 4). The wording used in the EU principle is similar to the one used in the Rio Declaration and urges all EU MS to support one other in case of an emergency.

<sup>22</sup> The article does not have an official name. The name presented is given by the authors of this report.

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## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ By warning, especially neighbouring countries early on, the negative impacts of a disaster for these countries can be reduced or at least an attempt can be made.
- *Affected environment?*
  - ✓ The instruction affects all environments, although the main focus is on nature.
- *Influence on crisis management?*
  - ✓ Especially the second part of the instruction will influence crisis management as an international obligation is introduced and countries in need should be supported as much as possible.

## Positive impacts and opportunities

If countries are warned directly after the occurrence of a crisis, they are better able to take preventive measures ensuring that the impact on their own environment will be less. Overall, the negative impacts of a disaster in general and the negative impacts on the environment in particular can be reduced.

## Checklist for DRIVER partners

- *Do's*
  - ✓ In case of a disaster warn surrounding countries as soon as possible.
  - ✓ If your neighbour is in need, help him.

## More information

- Rio Declaration on Environment and Development – Rio de Janeiro 1992 [18]
- Handl, G. (2012), 'Declaration of the United Nations Conference on the Human Environment 1972 and The Rio Declaration on Environment and Development, 1992 [50].

## 5.22 Instruction 22: Assess the potential environmental impact of a chemical disaster

### Source

Guidelines for Environmental Assessment following Chemical Emergencies (1999), United Nations office for the Coordination of Humanitarian Affairs – United Nations Environment programme [26].

### Scope of application and level of bindingness

The Guidelines are a non-binding instrument published by the Joint UNEP/OCHA unit. Although the Guidelines are officially non-binding, they are followed by most UN members. As the Guidelines provide opportunities for international assistance following a chemical disaster, the forms included in

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the Annexes need to be used. Therefore, the Guidelines have an implicit way of binding countries to the principles laid down in them.

## Content

The Guidelines only focus on actual or potential environmental impacts of chemical disasters and accidents, and so do not apply to any other form of disaster. In paragraph 2.2 the Guidelines provide a clear definition of what needs to be considered as environmentally threatening.

### Paragraph 2.2: assessment criteria

A chemical emergency is considered to be environmentally threatening if it causes permanent or long term damage to particular unique, rare or otherwise valued components of the man-made or natural environment, or if there is widespread environmental loss or damage.

When considering environmental impact we need to examine the environmental elements or compartments affected such as: air, water, soil, plants and animals. [26]

For each of the groups (i.e. air, water, soil, plants and animals) it is specified what the potential contamination, spread or exposure can be. Then the guidelines follow with a roadmap, containing steps, which can be followed during the preparation phase. For example, the first responders tasked to do the first assessment should be able to rely on reliable sources. The Guidelines indicate which sources can be considered as reliable, e.g. the Ministry of Environment, Water authorities and Health authorities. It is also stated that first responders should be warned not to jeopardise their own safety by taking unnecessary risks or entering contaminated areas.

The Guidelines then follow with guidance on how the environmental impact can be established. For many different categories, e.g. freshwater and estuaries, crops, domestic animals and other foodstuff guidance is provided.

## Applicability in crisis management

In crisis management the Guidelines can be used in two ways. First of all, the Guidelines can be used in the preparation phase. In the Guidelines it is clearly specified what environmental damage is, is specified. The document indicates what long term damage is and what is internationally considered to be 'a state close to the original'. Also the steps needed to be able to carry out an assessment quickly are defined in the Guidelines. If the guidance is followed a country will be better prepared to respond quickly and appropriately in case of a disaster.

Secondly, the Guidelines indicate how the environmental damage needs to be assessed. As the Guidelines are accepted by most countries, environmental damage is measured in the same way and response activities can become more harmonised, which will make the response of international assistance more targeted and better suitable for the situation at hand.

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## Links with other tools, principles and regulations

The guidance provided is adopted at a high scale level. Countries are allowed and encouraged to translate this guidance into their national policies. Many countries will have more detailed response plans in place, based on the UN Guidelines. A document closely linked to the Guidelines is the EU Directive on the control of major hazards (see instruction 9).

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ By following the Guidelines the negative impact of the chemical accident can be quickly assessed and the sufficient counter measures can be taken. The quicker these counter measures can be taken the less the environmental damage will be done.
- *Affected environment?*
  - ✓ All environments are affected. Special attention is paid to ancient monuments, heritage buildings and areas of archaeological important (par. 4.2.10 of the Guidelines). This is rather unique as this group is often not explicitly included in official documents.
- *Influence on crisis management?*
  - ✓ By following the rules it should become easier for first responders to assess the actual or potential environmental impacts and appropriate counter measures can be taken earlier on.

## Positive impacts and opportunities

By having proper preparedness plans in place, it becomes easier to respond quickly in case of a disaster and to be able to reduce the negative impact on the environment.

## Checklist for DRIVER partners

- *Do's*
  - ✓ Ensure that a proper preparedness plan is in place;
  - ✓ Ensure that the reliable sources indeed have the relevant information necessary for responding adequately to a crisis.
- *Be aware*
  - ✓ Be aware of the existing classification systems in your own country.
  - ✓ It is possible to ask for international assistance. Be aware that asking such assistance needs to be done as specific as possible to ensure minimum delays to identify suitable responders.

## More information

- Guidelines for environmental assessment following chemical emergencies – UNEP [26]

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## 5.23 Instruction 23: Apply the disaster waste management guidelines

### Source

Joint UNEP/OCHA Environment Unit, published January 2011 [21].

### Scope of application and level of bindingness

Highly relevant as the guidelines provides pragmatic and direct advice on how to manage and handle solid wastes following crises (disasters and conflict). The proper and correct management with handling of solid waste is typically regulatory driven depending on the country and so laws and regulations will exist determining how wastes can be managed.

The guidelines themselves are not legally binding.

### Content

The Guidelines cover all solid wastes that typically arise following crises (disasters and conflicts) from assessment of the wastes through to decision making on how to handle and manage including recycling/reuse and disposal solutions.

### Applicability in crisis management

Highly applicable for crises that generate solid wastes, including hazardous wastes.

### Links with other tools, principles and regulations

Has links to other relevant specific waste management guidelines as well as an online learning tool.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ Will support reduction in environmental impact if guidance followed.
- *Affected environment?*
  - ✓ Will support mitigation of damage to the affected environment if guidance followed.
- *Influence on crisis management?*
  - ✓ Provides pragmatic and practical solutions to handling and managing wastes in crisis response.

### Positive impacts and opportunities

The guidelines include for recycling and reuse of the wastes thus providing opportunities for positive environmental impacts as well as support to affected communities regaining their livelihoods.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Read the guidelines to familiarise yourself with the guidance.

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- ✓ Use, depending on the phase, the following tools:

Available tool	Step	Source
<b>Immediate and short term phase tools and steps</b>		
Waste needs assessment	Use this checklist to identify what different types of waste are present, where and in what condition	Annex I (guidelines)
Hazard ranking tool	Fill this table with all waste streams and associated hazards/risks	Annex II (guidelines)
Waste handling matrix	Refer to this for options on handling, treating and disposing each disaster waste type	Annex III (guidelines)
Disposal site guidelines	Select emergency dumpsites using these guidelines	Annex IV (guidelines)
<b>Medium term actions' tools and steps</b>		
Waste needs assessment	Revisit current waste activities and ensure different types of waste are being accounted for	Annex V (guidelines)
Waste handling matrix	Review options for the handling, treatment and disposal of each disaster waste stream	Annex III (guidelines)
Fundraising	Hold consultations on the development of waste management project proposals and/or funding requests	Annex VI (guidelines)
Dumpsite closure guidelines	Use these to close unmanaged dumpsites.	Annex VII (guidelines)
<b>Long term actions' tool and steps</b>		
Exit strategies	Develop exit strategies and handover of disaster waste management projects	Annex VIII (guidelines)
Contingency planning tools and steps	Complete contingency planning guidelines are available as tag 7 of the on-line DWM guidelines	<a href="http://www.eecentre.org">http://www.eecentre.org</a>

**Table 6: Available waste assessment tools per phase**

- *Be aware*
  - ✓ That some wastes are hazardous and can have a detrimental impact on both the health of the survivors from a crisis and on the environment.

### More information

- ✓ The guidelines are available online at:  
<https://docs.unocha.org/sites/dms/Documents/DWMG.pdf> [29].

## 5.24 Instruction 24: Use the debris and solid waste disposal guidance

### Source

UNEP Publication “Closing an Open Dumpsite and Shifting from Open Dumping to Controlled Dumping and to Sanitary Land Filling” [28].

### Scope of application and level of bindingness

The proper and correct management with handling of solid waste is typically regulatory driven depending on the country and so laws and regulations will exist determining how wastes can be managed.

The guidelines are only applicable where the crisis response requires including disposal of solid wastes and the liability thereof which may be the case in most situations as all crises generate solid waste. The guidelines are not binding, they serve as advice.

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## Content

The scope is for the management and closure/upgrading of disposal sites for solid wastes.

## Applicability in crisis management

Yes, applicable since all crises generate some level of solid waste which will require disposal.

## Links with other tools, principles and regulations

There are links to other relevant guidance within the training documents.

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ Will reduce the potential negative environmental impacts from the disposal of solid wastes.
- *Affected environment?*
  - ✓ Will reduce the potential negative environmental impacts from the disposal of solid wastes.
- *Influence on crisis management?*
  - ✓ Will provide support to the proper and regulatory compliant approach for managing solid wastes generated by the crisis.

## Positive impacts and opportunities

The training materials provide support on improving the management of disposal sites and thus there will be a reduction in negative environmental impact from the disposal of wastes.

## Checklist for DRIVER partners

- *Do's (general)*
  - ✓ Be aware of the training materials and pass to the wastes responsible person in crisis management.
- *Do's in the first 72 hours<sup>23</sup>*
  - ✓ Store useful materials for rebuilding or recovery efforts, such as wood, planks, bricks, cement blocks and containers.
  - ✓ Look for recycling opportunities in local areas.
  - ✓ Protect yourself. Enter damaged buildings cautiously and only in necessary. Wear boots, gloves, dust masks, overalls and helmets, if available, Wash and, if possible, disinfect your hands regularly.
  - ✓ If you suspect waste to be dangerous, warn other workers and notify the authorities.

<sup>23</sup> [http://www.unep.org/ietc/Portals/136/Publications/Waste%20Management/SPC\\_Training-Module.pdf](http://www.unep.org/ietc/Portals/136/Publications/Waste%20Management/SPC_Training-Module.pdf)

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- When possible, fence off the areas or secure the waste clearly in labelled containers.
- ✓ Remember the five stages of debris removal:
  - Recover the living
  - Recover the dead
  - Recover valuables
  - Clear for access
  - Clear for reconstruction and recycling
- *Do's in the **long run** (disposal of waste)*
  - ✓ Consult local government and environmental authorities. Use existing waste handling facilities in the area before you set up a storage site.
  - ✓ Estimate the amount of waste expected, the space required for its disposal, and the types of waste to be dealt with
  - ✓ Instruct workers in the safe handling of hazardous materials, such as chemicals, healthcare wastes and biological materials.
  - ✓ Separate wastes according to their reusability – bricks, concrete, timber, metal, solid containers, etc.
  - ✓ Put temporary landfills where they can be easily accessed by large trucks.
  - ✓ If waste cannot be incinerated properly, then store it in areas with clay or solid rocks. Do not store it near wells and groundwater.
- *Don'ts in the first **72 hours***
  - ✓ Avoid burning waste openly. If burning is necessary, locate a properly operated incinerator.
  - ✓ Don't mix wastes from hospitals and clinics with other wastes. Store waste from hospitals and clinics in sealed, labelled containers.
- *Don'ts in the **long run** (disposal of waste)*
  - ✓ Never deposit waste near a watercourse, in a flooded area or close to an environmentally sensitive area such as a forest or a beach.
  - ✓ Don't store wastes near or upwind of human habitation, to avoid flies, rats and bad smells.
  - ✓ Don't leave wastes near hillsides where rainwater drainage can flood homes and camps.
  - ✓ Avoid burning waste openly. If necessary, use a properly operated incinerator to burn (healthcare) waste.
- *Be aware*
  - ✓ That this is typically regulatory compliant requirement to handle and manage solid wastes properly.

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### More information

- ✓ The Training materials are available at:  
[http://www.unep.org/ietc/Portals/136/Publications/Waste%20Management/SPC\\_Training-Module.pdf](http://www.unep.org/ietc/Portals/136/Publications/Waste%20Management/SPC_Training-Module.pdf) [46].

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## Initial clearing of debris and solid waste

Debris from collapsed buildings can obstruct relief operations, pollute groundwater, and threaten the local population and relief workers with hidden dangers and further collapse. Proper clearing is essential for the short- and long-term success of recovery efforts.

**DO**

Store useful materials for rebuilding or recovery efforts, such as wood planks, bricks, cement blocks and containers and look for recycling opportunities in local areas.

**DON'T**

Avoid burning waste openly. If burning is necessary, locate a properly operated incinerator.

**DO**

Protect yourself. Enter damaged buildings cautiously and only if necessary. Wear boots, gloves, dust masks, overalls and helmets, if available. Wash and if possible disinfect your hands regularly.

**DO**

If you suspect waste to be dangerous, warn other workers and notify authorities. When possible, fence off the area or secure the waste in clearly labelled containers.

**DON'T**

Don't mix wastes from hospitals and clinics with other wastes. Store them in sealed, labelled containers.

**DO**

Remember the five stages of debris removal:

- ✓ Recover the living
- ✓ Recover the dead
- ✓ Recover valuables
- ✓ Clear for access
- ✓ Clear for reconstruction and recycling



This information sheet was compiled from several sources by the Joint UNEP/OCHA Environment Unit, Office for the Coordination of Humanitarian Affairs, Palais des Nations, CH-1211 Geneva 10, Switzerland. Tel: +41 (0)22 917 3484, Fax: +41 (0)22 917 0257

Figure 6: Flyer indicating what and what not to do from training guide, Part I

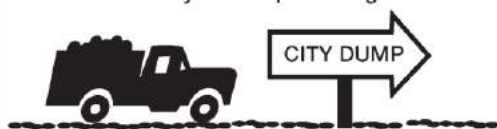
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## Where best to deposit waste

If properly managed, a storage site for disaster wastes will facilitate relief operations and subsequent recovery and rebuilding. If badly managed, waste can hamper relief operations for a long time.

### DO

Consult local government and environmental authorities. Use existing waste handling facilities in the area before you set up a storage site.



### DON'T

Never deposit wastes near a watercourse, in a flooded area or close to an environmentally sensitive area such as a forest or beach.



### DON'T

Don't store wastes near or upwind of human habitation, to avoid flies, rats, and bad smells. Don't leave wastes near hillsides where rainwater drainage can flood homes and camps.



### DO

Estimate the amount of waste expected, the space required for its disposal, and the types of waste to be dealt with. Instruct workers in the safe handling of hazardous materials such as chemicals, healthcare wastes and biological materials.



### DO

Separate wastes according to their reusability – bricks, concrete, timber, metal, solid containers, etc.



### DO

Put temporary landfills where they can be easily accessed by large trucks.



### DO

If waste cannot be incinerated properly, then store it in areas with clay or solid rocks and away from wells and groundwater.



### DON'T

Avoid burning waste openly. If necessary, use a properly-operated incinerator to burn healthcare wastes.



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Figure 7: Flyer indicating what and what not to do from training guide, Part II

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## 5.25 Instruction 25: Strive to reduce future vulnerabilities to disaster

### Source

The Code of Conduct for International Red Cross and Red Crescent Movement and Non-Governmental Organisations (NGOs) in Disaster Relief (1994). Prepared by the International Federation of Red Cross and Red Crescent Societies and the ICRC.

### Scope of application and level of bindingness

The principles laid down in the Code of Conduct do apply throughout all parts of the Red Cross / Red Crescent organisations. The Code of Conduct is not a legally binding document and members not obliging the principles cannot be sanctioned. However, the Code of Conduct is a self-regulating policy and for employees of the Red Cross / Red Crescent these principles are morally binding. Irrespective where they are based and where they will carry out their activities, these principles do apply to their work.

The Code of Conduct is also recognised, among others, by the European Union. Although the principles are not legally binding to EU organisations and Member States, the principles have become part of a wider humanitarian framework and in all EU activities in the field of humanitarian aid these principles play an important. Their importance for EU aid work has been explicitly expressed in 'The European consensus on humanitarian aid' statement 41. [23]

### Content

The Code of Conduct contains ten principles which apply to the Red Cross / Red Crescent activities. For the legal framework on environmental impacts, principle 8 of this Code is the most relevant one. Based on this principle, aid workers need to pay sufficient attention to reduce negative environmental impacts when helping to create a sustainable lifestyle for beneficiaries. Although the principle is broader than impact on the environment, it is one of the focus areas, especially in designing and managing relief programs. Overall, the negative impacts of humanitarian assistance, also on the environment, should be diminished as much as possible.

#### 8 Relief aid must strive to reduce future vulnerabilities to disaster as well as meeting basic needs

All relief actions affect the prospects for long-term development, either in a positive or a negative fashion. Recognising this, we will strive to implement relief programmes which actively reduce the beneficiaries' vulnerability to future disasters and help create sustainable lifestyles. We will **pay particular attention to environmental concerns** in the design and management of relief programmes. We will also endeavour to minimise the negative impact of humanitarian assistance, seeking to avoid long-term beneficiary dependence upon external aid. [27]

As indicated above the principle is not legally binding, but all parts of the Red Cross / Red Crescent organisations are stimulated to respects those principles. Also, other organisations involved in humanitarian aid are encouraged to do so. In addition, he EU has explicitly indicated to take them into account in all their humanitarian aid actions (irrespective the EU organisation dealing with the topic).

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## Applicability in crisis management

Principle 8 of the Code of Conduct applies during all phases of crisis management. As indicated in the explanation to the principle, environmental concerns are considered in the development and operation of relief programs. From the earliest moment onward, the protection of the environment is embedded in the activities carried out by Red Cross / Red Crescent employees when they are providing aid.

## Links with other tools, principles and regulations

This instruction applies to the largest voluntary aid organisation. The instruction can be read in close relation with the more general principles on environmental protection of the UN.

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The principle urges all Red Cross / Red Crescent employees to focus on environmental protection while providing aid. Also environmental protection is embedded in all relief programs established by the organisation. Therefore, a positive impact on the environment can be expected.
- *Affected environment?*
  - ✓ All environments will be affected as the instruction is broadly defined and therefore applies to nature, the build- and human environment.
- *Influence on crisis management?*
  - ✓ The instruction will ensure that more focus will be put on the environmental impact of providing aid.

## Positive impacts and opportunities

By including a principle on environmental impact in the main principles of the Red Cross / Red Crescent, environmental protection becomes more and more embedded in the activities of the organisation. By an increased awareness on environmental impacts, the negative impacts of relief will be diminished overtime.

## Checklist for DRIVER partners

- *Do's*
  - ✓ EU crisis management could, where possible, take into account the Red Cross / Red Crescent principles, especially the one on environmental protection.

## More information

- The Code of Conduct for International Red Cross and Red Crescent Movement and Non-Governmental Organisations (NGOs) in Disaster Relief [27]
- <http://www.ifrc.org/en/publications-and-reports/code-of-conduct/> [38]

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## 5.26 Instruction 26: Familiarize yourself with the Environmental guidebook for military operations

### Source

Guidebook developed by a multinational working group consisting of representatives from the defence organisations of Finland, Sweden and The United States (March 2008) [25].

### Scope of application and level of bindingness

Environmental policy for military operations is considered as a form of 'environmental stewardship'. Although the guidebook applies to military activities only, it may provide useful guidance for responders too. The practices laid down in the guidebook might be used as they aim to reduce negative environmental impact of activities too.

It includes the following elements:

- The tenet that environmental protection is every individual's responsibility
- Compliance with applicable legal requirements, including international agreements
- Recognition of the importance of environmental planning
- The goal of minimizing environmental damage
- A respect for local environmental standards
- The minimization of waste streams by wisely using raw materials, hazardous substances, energy, water, etc.
- Effective handling and storage of hazardous substances
- Timely response to environmental incidents to mitigate impacts
- Minimizing noise and other safety hazards

Force Commanders and unit leaders should therefore be aware of all applicable policy, and should define the policy requirements through a memorandum of intent, published Standard Operating Procedures (SOPs), or other similar directive. Consideration should be given to troop contributing nation (TCN) requirements, multilateral or coalition policy, or force-specific directives. References to all relevant policy should be included in the Operations Plan (OPLAN).

### Content in general

NATO Definition of Environmental Protection (EP): Measures and controls to prevent damage and degradation of the environment, including the sustainability of its living resources.

The Guidebook proposes to conduct Environmental Risk management Assessments, including an Environmental Baseline Survey (EBS) and Environmental Health Site Assessments (EHSA). A site-specific EBS should be conducted to document initial environmental conditions. The EBS identifies existing environmental hazards and sensitivities (use of a checklist). The purpose of an EHSA is to

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identify environmental, health, and safety conditions that may pose health risks to deployed personnel.

The guidebook also proposes guidelines for: an Environmental Awareness Training and Education, Development of an Environmental Management Plan (EMP), setting up of a Environmental Management Board (EMB), and the application of Protocols, Standard Operating Procedures (SOPs) and Best Management Practices (BMPs).

Environmental Protocols are related to:

- Wastewater
- Solid Waste
- Hazardous Waste
- Medical Waste
- Hazardous Materials / POL
- Air Pollution
- Potable/Non-Potable Water
- Noise
- Natural Resources
- Cultural Resources
- Pesticide Management
- Spill Response

Even under the most austere conditions, there are minimum environmental standards for the protection of human health and the environment. As the operation stabilizes and resources become more available, the ability to comply with more protective standards will increase in steps, resulting in an overall increase in environmental stewardship, as depicted in the figure below. This scalable approach to environmental considerations is critical in the development of flexible courses of action for environmental sustainability, while maintaining minimum environmental standards for the protection of human health and the environment.

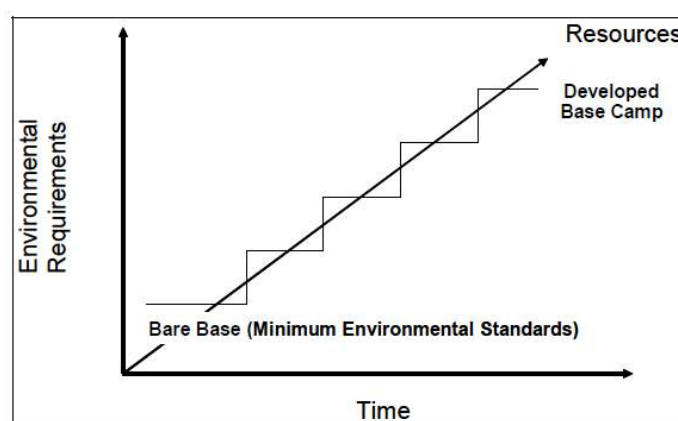


Figure 8: Variables affecting environmental considerations<sup>24</sup>

<sup>24</sup> [http://www.defmin.fi/files/1256/Guidebook\\_final\\_printing\\_version.pdf](http://www.defmin.fi/files/1256/Guidebook_final_printing_version.pdf)

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### Applicability in crisis management

The guidelines are developed for military activities and therefore are not directly applicable to crisis management. However, in case of a crisis the military can often be involved in providing specialised aid. In such circumstances the principles laid down in the guidelines can still apply to the forces helping out in the crisis. In addition, the guidelines can be seen as a best practice which could partially or entirely be voluntarily adopted by different first responders.

### Links with other tools, principles and regulations

The principles laid down in the guidelines are not directly linked to any legislation, principle or tool. However, it can be regarded that the guidelines are an elaboration of the general principles of environmental protection specifically adopted by the military.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ Although the guideline is not directly applicable to crisis management, using principles of it might have a positive environmental impact.
- *Affected environment?*
  - ✓ All environments can be affected.
- *Influence on crisis management?*
  - ✓ If the principles are used (especially the ones indicated in the table above) crisis management might become more effective, without further damaging the environment.

### Positive impacts and opportunities

See above.

### Checklist for DRIVER partners

- *Do's*
  - ✓ If possible and desirable adopt the principles from the guidelines and incorporate them in your crisis management plans.
  - ✓ Select the relevant environmental impact from the table below and select the appropriate management process to mitigate that impact.
  - ✓ Distinguish between actions required on the short term (left column), actions required on the medium term (middle column) and actions required on the long run (right column).

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Environmental Protocol	Duration of Operation <sup>25</sup>		
	Short-Term	Medium-Term	Long-Term
<b>Wastewater – Black (human waste)</b>	Field expedient methods: burn barrels, slit trench, pit latrines, and chemical toilets (contracted disposal)	Field expedient methods, chemical toilets (contracted disposal), semi- permanent latrines, facultative ponds/lagoons, municipal or camp WWTP (primary & secondary treatment)  Sewage Sludge: Contract off-site disposal, land apply, or compost	Chemical toilets (contracted disposal), semi-permanent latrines, facultative ponds/lagoons, municipal or camp WWTP (primary & secondary treatment with disinfection)  Sewage Sludge: Contract off-site disposal, land apply, or compost
<b>Wastewater – Gray</b>	Field expedient methods: evaporation beds, soakage pits, and French drains	Field expedient methods: evaporation beds, soakage pits, and French drains. Facultative lagoons, municipal or camp WWTP (primary & secondary treatment)	Facultative lagoons, municipal or camp WWTP (primary & secondary treatment with disinfection)
<b>Solid Waste</b>	Field expedient methods: burn pits, bury-in-place, back-haul/retrograde	Field expedient methods: burn pits, bury-in-place, back-haul/retrograde. Engineered landfill, incineration	Engineered landfill, incineration, recycling, composting
<b>Hazardous Waste</b>	Field collection, consolidation, storage, segregation, secondary containment, labelling. Retrograde.	Centralized collection, consolidation, storage, segregation, secondary containment, labelling. Retrograde or disposal in compliant HW facility	Centralized collection, consolidation, storage, segregation, secondary containment, labelling. Retrograde or disposal in compliant HW facility
<b>Medical Waste</b>	Field collection, consolidation/storage, segregation, labelling, and retrograde, autoclave	Contract off-site disposal, retrograde, two-stage incinerator	Contract off-site disposal, retrograde, two-stage incinerator
<b>Hazardous Materials / POL</b>	MSDS, segregation, safety, secondary containment, HAZCOM/HAZMAT training, HAZMIN	MSDS, segregation, safety, secondary containment, HAZCOM/HAZMAT training, HAZMIN	MSDS, segregation, safety, secondary containment, HAZCOM/HAZMAT training, HAZMIN
<b>Air Pollution</b>	Minimize open fires/burning, dust suppression	Control open fires/burning, dust control and suppression	Compliant generators, aqueous solvents, proper vehicle maintenance, Minimize emissions and traffic
<b>Potable/ Non-Potable Water</b>	Bottled water, wells, field expedient methods, water treatment system, and municipal water systems.	Bottled water, wells, field treatment methods, water treatment system, and municipal water systems.	Bottled water, wells, water treatment system, and municipal water systems.
<b>Noise</b>	Field expedient methods: sand bags, earthen berms, vehicles, or other physical barriers	Field expedient methods: sand bags, earthen berms. Construction of physical barriers, distance/relocation	Engineered sound proofing/physical barriers, centralized generator farms, low-noise generators
<b>Natural/Cultural Resources</b>	Obtain lists, survey base camps, limit impacts, avoid/ minimize damage due to mission requirements	Obtain lists, survey base camps, limit impacts, avoid/ minimize damage due to mission requirements. Consider a natural and cultural resources management plan	Obtain lists, survey base camps, limit impacts, avoid/ minimize damage due to mission requirements. Consider a natural and cultural resources management plan
<b>Pest Management</b>	Use approved pesticides, record pesticide use, follow HAZMAT guidelines	Use approved pesticides, record pesticide use, follow HAZMAT guidelines	Integrated pest management plan using approved pesticides. Record pesticide use, follow HAZMAT guidelines

<sup>25</sup> [http://www.defmin.fi/files/1256/Guidebook\\_final\\_printing\\_version.pdf](http://www.defmin.fi/files/1256/Guidebook_final_printing_version.pdf)

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Environmental Protocol	Duration of Operation <sup>25</sup>		
	Short-Term	Medium-Term	Long-Term
Spill Response	Unit SOP, spill response plan, equipment and reporting. Field expedient secondary containment	Unit SOP, spill response plan, equipment and reporting. Interim spill prevention and control containment structures	Semi-permanent spill containment structures. HAZMIN. Regular inspections. Spill prevention control and countermeasures plan

**Table 7: Overview of considerations for environmental protection**

### More information

- [http://www.defmin.fi/files/1256/Guidebook\\_final\\_printing\\_version.pdf](http://www.defmin.fi/files/1256/Guidebook_final_printing_version.pdf) [34]

## 5.27 Instruction 27: Familiarize yourself with the Guidebook on Environmental Considerations during Military Operations

### Source

Guidebook on Environmental Considerations during Military Operations. A Joint United States – Republic of South Africa Environmental Security Working Group Project, Publication ESWG/006, June 2006 [24].

### Scope of application and level of bindingness

This guidebook is intended to assist the international military community in identifying procedures to adequately assess the impacts of its activities to meet its environmental responsibility and accountability to ensure a sustainable environment. Environmental Considerations during Military Operations (ECOps) are to be implemented in all activities taking place during operations, integrated with project planning as well as day-to-day operations. Although the guidebook applies to military activities only, it may provide useful guidance for responders as well. The practices laid down in the guidebook might be used as they aim to reduce negative environmental impact of activities as well.

### Content in general

It covers the complete life cycle of any event/project/military operation:

- Stage 1: Intention to Stage a Military Operation
- Stage 2: Planning
- Stage 3: Execution
  - Pre-deployment
  - Deployment
  - Rotation of Forces
  - Re-deployment
- Stage 4: Post Deployment

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The guidebook recommends an environmental situation analysis in order to derive inputs for broad ECops guidelines in terms of the following, but not limited to:

- **Legal Review.** The complete environmental legal framework must be reviewed in terms of the specific situation, e.g., applicable conventions and treaties.
- **Policy Review.** Guidelines should be compiled for those issues not specifically provided for by existing policies on decisions made for the mission and its situation.
- **Environmental Intelligence.** Liaison with the embassy of the host nation and its relevant departments/NGOs may take place on a strategic level to determine a broad picture of the country in terms of critical unique resources, environmental issues in-country, infrastructure that might affect one's own forces and available supporting infrastructure and services (e.g., accommodation, disposal sites and sewerage plants). Intelligence may come from a variety of standard and non-standard sources.

The table on the next page can be used by commanders and planners to develop the appropriate level of environmental protection. The level of environmental protection is dependent upon the length of time for the deployment and also on the nature of the mission. However, the long-term measures (found within the last column) should always be considered the goal, regardless of the duration or type of mission.

### Applicability in crisis management

Similarly to the previous entry, this guidebook is developed for military activities and therefore is not directly applicable to crisis management. However, the guidance provided in this book might be useful for crisis management activities and some parts might be included in crisis management plans.

### Links with other tools, principles and regulations

The principles laid down in the guidebook are not directly linked to any legislation, principle or tool. However, it can be considered that the guidelines are an elaboration of the general principles of environmental protection specifically adopted by the military.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ If principles from this guidebook are used in crisis management, the environment is likely to be positively affected.
- *Affected environment?*
  - ✓ All environments will be affected. However the main focus is on protection of nature.
- *Influence on crisis management?*
  - ✓ If the principles are used (especially the ones indicated in the figures above) crisis management might become more effective, without further damaging the environment.

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## Positive impacts and opportunities

See above.

## Checklist for DRIVER partners

- *Do's*

- ✓ If possible try to incorporate the most relevant principles into your crisis management plans.
- ✓ Select the relevant area from the table below and select the appropriate level of environmental protection (where possible).
- ✓ Distinguish between actions required on the short term (left column), actions required on the medium term (middle column) and actions required on the long run (right column).

Area	Duration of Operation <sup>26</sup>			
	Immediate	Short-Term	Medium-Term	Long-Term
<b>1. Field sanitation</b>				
<b>Human waste</b>	Unit field SOP	Slit trench	Chemical toilets or septic tanks	Sanitary system or link to existing infrastructure
<b>2. Waste management</b>				
<b>Solid waste – combustible</b>	Unit field SOP	Incineration	Incineration and landfill	Recycling, landfill and incineration
<b>Solid waste – non combustible</b>	Unit field SOP	Back load	Back load and landfill	Recycling and landfill
<b>Solid food waste</b>	Unit field SOP	Incineration or landfill	Compost, incineration or landfill	Compost
<b>Gray water</b>	Unit field SOP	Effluent downstream from water resources	Primary treatment (collection basin, oxidation pond, wetland treatment)	Sanitary system
<b>Medical waste</b>	Incineration, autoclave, back load	Incineration, autoclave, back load	Incineration, autoclave, back load	Incineration, autoclave, back load and sanitary system disposal when approved
<b>Hazardous waste</b>	Unit collection; Avoid water contamination	Field collection and consolidation	Collection points established, classify, label and back load or contractor disposal	Host nation procedures (contractor disposal)
<b>3. Hazardous materials</b>	Unit field SOP	Spill response, report water contamination	HAZMAT tracking, spill response, report spills	Spill prevention plans, response team
<b>4. Natural resources protection</b>				
<b>Water</b>	Unit field SOP	Due care	Erosion control measures, monitor surface water quality	No degradation of water quality due to erosion or effluent
<b>Vegetation</b>	Unit field SOP	Due care in cleaning for fields of	Due care in cleaning for fields of fire,	Cleaning requirements environmental impact

<sup>26</sup> <http://www.dfac.mil.za/publications/guidebooks/ECOPS%20guidebook%20052306.pdf>

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Area	Duration of Operation <sup>26</sup>			
	Immediate	Short-Term	Medium-Term	Long-Term
		fire/camouflage	camouflage, wildfire control procedures	assessment process and wildfire prevention plans
<b>Wetlands</b>	Unit field SOP	Due care in operations and logistics	Avoid operations which degrade wetlands	Damage to wetlands requires environmental impact assessment process
<b>Air</b>	Unit field SOP	Control open fires, dust suppression (non-hazardous only)	Control open fires, fugitive dust	Regulations on incineration and traffic
<b>Wildlife</b>	Unit field SOP (+ no pets or mascots)	Avoid accidental kills and habitat destruction	Note and avoid specific habitats; minimise impact TES	TES fully protected
<b>Marine</b>	Unit SOP and applicable international agreements	Unit SOP and applicable international agreements	Unit SOP and applicable international agreements	Unit SOP and applicable international agreements
<b>5. Cultural and historical preservation</b>	Due care in planning	Minimise damage if unavoidable due to mission requirements	Higher HQ approval required for operations in area	JTF approval or cultural resource management plan
<b>6. Environmental assessments</b>	n/a	Exercise due care in planning and operations	Assessment required for activities with a potential to inflict major damages	SOFA or host nation governing standards
<b>Installations operations</b>	Note environmental conditions before and after occupations.	Note environmental conditions before and after occupation	Operate IAW governing environmental standards	Operate IAW governing environmental standards

Purple: actions can be applied in civil crisis management response and recovery.

**Table 8: Overview of potential action for environmental protection**

### More information

- <http://www.dfac.mil.za/publications/guidebooks/ECOPS%20guidebook%20052306.pdf> [36]

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## Overview of environmental crisis tools

Tool A	Environmental Emergency Risk Index
Tool B	Flash Environmental Assessment Tool
Tool C	Hazard identification tool
Tool D	UNHCR FRAME – The Environment in Refugee-related Operations
Tool E	Guidelines for rapid environmental impact assessment in disasters
Tool F	Database of 3700 toxic substances
Tool G	DWR debris planning tool
Tool H	Evacuation decisions tool
Tool I	HAZUS tool

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## 6 The environmental CM tools explained

This chapter focuses on the main tools which can be used in crisis management. Some of the tools can be used in the prevention and preparedness phase, while others are useful additions in the response and recovery phase. Most of the tools can be used on a voluntary basis as none of them are binding. It is up to the policy makers and first responders whether or not they think it is useful to use the tools.

The tools included in the analysis originate from different sources. Some of the tools are adopted by the UN and are also widely used already in crisis management. Examples are EERI, FEAT, HIT, FRAME and REA guidelines. Other tools are developed by DRIVER partners (not specifically within the context of the project). Examples are the RIB database and the DWR debris tools. A last group consists of tools developed by individual organisations outside the DRIVER consortium. Examples of such tools are EvacuAid and Hazus.

In the sections below the different tools will be described. They are presented in the following order:

1. UN tools;
2. Driver partner tools;
3. Other relevant tools.

### 6.1 Tool A: Environmental Emergency Risk Index (EERI)

#### Source

Joint UNEP/OCHA Environment Unit (2014)

#### Scope of application and level of bindingness

The EERI is a non-binding tool which can be used on a voluntary basis by countries and regions who wish to do so. The tool can be used in 191 countries, because for these countries, the data needed in the EERI calculation, are publicly available. Therefore the tool has a wide applicability. EERI is mainly developed for policy makers.

#### Content

The EERI can be used to assess and calculate the environmental risks a country faces. The tool builds upon other crisis management tools and starts with indices relating to humanitarian, development and environmental performance. Special attention is paid to technological hazards and environmental vulnerability, two aspects that are not included in other crisis management tools. By including these two indicators, the risk of man-made hazards is better ensured in the environmental risk assessment as it is expected that more crises will result from technological disasters.

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To develop an EERI for a specific country or region 17 different indicators are used, for which data are collected in a transparent way. In the figures below the indicators are shown per different category (first figures) as well as the weight of the different indicators in the overall risk calculation (second figure).

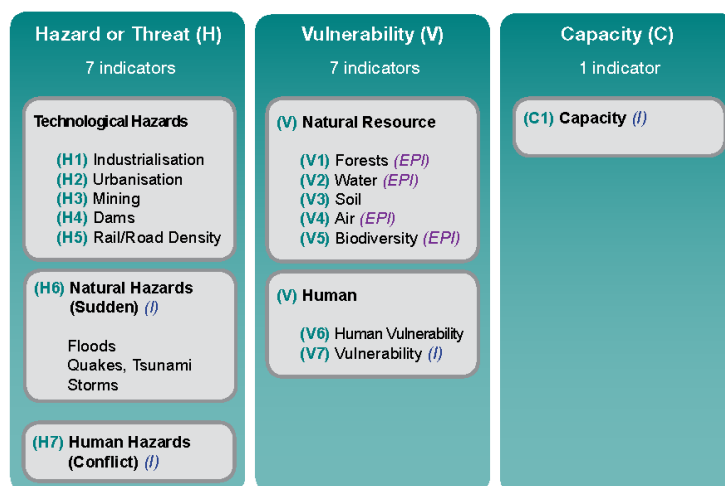


Figure 9: Indicators used in the Environmental Emergency Risk Index<sup>27</sup>

INDICATOR (layer iii)	INDICATOR COMPILATION (layer ii)	%	INDICATOR COMPILATION (layer i)	%
HAZARD 40%	Technological hazards	50%	Industrialization	25%
			Urbanization	25%
			Mining	25%
			Rail & Road Density	15%
			Dams	10%
	Natural hazards	37,5%	taken from InfoRM	
	Human hazards	12,5%	taken from InfoRM	
VULNERABILITY 30%	Environmental vulnerability	33,5%	Forests	20%
			Water	20%
			Soils	20%
			Air	20%
			Biodiversity	20%
	Human Vulnerability	33%	Population Density	100%
	Vulnerability (InfoRM)	33,5%	taken from InfoRM	
CAPACITY 30%	Capacity	100%	taken from InfoRM	

Figure 10: Breakdown of the contribution as used at each stage of indicator compilation<sup>28</sup>

### Applicability in crisis management

Main aim of the EERI is to prepare countries for possible environmental risks. Therefore the tool is used early in the crisis management cycle (i.e. preparedness and prevention). Based on the outcomes

<sup>27</sup> <https://docs.unocha.org/sites/dms/Documents/EnvEmRiskIndex.pdf>

<sup>28</sup> <https://docs.unocha.org/sites/dms/Documents/EnvEmRiskIndex.pdf>

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of the EERI a country or region can draw an environmental emergency preparedness plan which will apply once a crisis occurs. Therefore, the EERI indirectly applies during the whole duration of a crisis.

### Links with other tools, principles and regulations

No direct link with other tools, legislation and principles were found.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ As indicated above the main aim of the EERI is to have a good understanding of all environmental risks related to disasters and prepare countries or regions in order to reduce the environmental impact on the different environments.
- *Affected environment?*
  - ✓ A combination of environments is affected as the EERI aims to protect the natural, built and human environment against disasters.
- *Influence of crisis management?*
  - ✓ By preparing the relevant stakeholders previous to a disaster, the EERI positively contributes to crisis management.

Due to the fact that the EERI can be made for 191 countries and overlapping regions, the tool can be used in Europe and therefore is relevant for DRIVER.

### Positive impacts and opportunities

By developing EERI for different countries or regions a better understanding of the possible risks for the area can be established. With better knowledge on possible disaster it is possible to better prepare for and even reduce the risk of a disaster.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Check whether or not a specific EERI is available for the DRIVER test countries/regions and what the available EERI indicates.
  - ✓ Use the tool as it allows for prioritisation of support efforts.
- *Be aware*
  - ✓ The EERI is a simple guidance tool and therefore does not cover the whole reality.

### More information

- ✓ <https://docs.unocha.org/sites/dms/Documents/EnvEmRiskIndex.pdf> [30]

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## 6.2 Tool B: The Flash Environmental Assessment Tool (FEAT)

### Source

Joint UNEP/OCHA Environment Unit (2009)

### Scope of application and level of bindingness

FEAT is a non-binding tool and therefore countries can decide whether or not they want to use this tool. The tool is mainly developed for first responders, to help them in the assessment of potential environmental impacts.

### Content

The tool can be used to assess existing or potential acute environmental impacts directly after the occurrence of a disaster. Main focus of FEAT is on the effects of released hazardous chemicals, especially on human health. To assess the impact several steps need to be taken which ultimately lead to a clear understanding of whether additional international expertise and/or resources are needed to address any impacts identified.

FEAT is structured in such a way that the impacts can be assessed in a short period of time allowing for immediate response. On the one hand the tool provides for different hazardous materials the most likely effects (see figure below for an example) and on the other hand provides far more detailed information when needed.

### Applicability in crisis management

The tool is mainly used once a disaster has occurred. Especially, in the first 72 hours after the disaster FEAT is a useful tool, as the tool can provide information on the potential negative impacts of the disaster on human health. Besides information on immediate negative effects, the tool also enables first responders to assess the long term effects on humans as well as the effects on the surrounding environment (i.e. life support and nature direct).

### Links with other tools, principles and regulations

The tool could be used in connection with the RIB (see Tool F) since the tools are complementary.

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H	Hazard Type from facilities and substances	Exp	Relevant Receptors			Relevant Pathways						Q	i	Potential Impact		
			Human	Live support	Nature									Human direct	Long-term	Life support and nature direct
			Humans <sup>1</sup>	Fishing area, surface water, ground water (wells)	Agriculture	Nature reserves	Rivers, lake coast	Air	Soil, ground-water	Lake	River, drains	Human	Animal			
<b>Toxic gas, explosive, flammable, combustible, small containers</b>																
	Toxic gas and smoke (GT)		■					■						1	3	2
	Explosives (liquid, solid) (E)		■					■				■		1	3	3
	Flammable and explosive gas (GF)		■					■						1	3	2
	Flammable liquids (LF)		■						■	■				2	3	2
	Small containers of chemicals ***		■								■	■		1	3	2
<b>Toxic liquids (to humans and environment)</b>																
	Toxic liquid (LTW, LTe)		■	■	■	■	■		■	■	■			2	3	1
	Volatile Toxic liquid (L-GT)		■					■						1	3	2
<b>Persistent and accumulating substances</b>																
	Persistent and/or bio accumulating, carcinogenic liquid (PB-L, CMR-L)		■	■	■	■	■		■	■	■			2	1	2
	Persistent and/or bio accumulating, carcinogenic dust and particles (PB-D, CMR-D)		■	■		■		■		■	■	■	■	2	1	2
<b>Natural impact on nature and infrastructure****</b>																
	Landslide		■											1	3	1
	Wave / flash floods		■		■	■				■	■			1	3	1
	Fire (forest)		■			■								1	3	2
	Erosion (fertile soil)				■	■								3	1*	2*
	Salt			■	■	■	■		■	■	■			3	1*	2*
	Mudflow / particles in water		■	■	■	■	■			■	■			2	3**	1
	Wind		■		■	■		■						2	3	1

■ Consistent ■ Occasional □ Assumed present

1 High Priority 2 Medium Priority 3 Low Priority

<sup>1</sup> Humans and large (breathing) animals

\* Long-term impact on life support functions

\*\* Except damage of mud on coral reefs

\*\*\* For example: jerry cans of pesticides. These are listed as an extra category because they are commonly used by small business and easily transported. The substances may be (re-)used or displaced by inexperienced persons which may cause uncommon scenarios of exposure.

\*\*\*\* If relevant and possible, potential natural impacts on nature and infrastructure should be identified in order to assess whether specialised assistance is needed.

Figure 11: Impression of FEAT (potential impacts of specific hazardous materials)<sup>29</sup>

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ FEAT can help first responders identify potential environmental impacts in the early stages of a crisis. Early identification allows for the early adoption of mitigation measures and therefore the reduction of the impact.
- *Affected environment?*
  - ✓ A combination of environments is affected as FEAT aims to assess the environmental impact of a disaster on the natural, built and human environment.
- *Influence of crisis management?*
  - ✓ The tool can influence crisis management positively as it provides first responders quickly with information on the most likely environmental impacts caused by toxic materials.

<sup>29</sup> [https://docs.unocha.org/sites/dms/Documents/FEAT\\_Version\\_1.1.pdf](https://docs.unocha.org/sites/dms/Documents/FEAT_Version_1.1.pdf)

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Therefore, first responders are able to quickly act upon a certain threat and minimize the negative impact on the (human) environment.

### Positive impacts and opportunities

If FEAT is used the immediate negative effects of the crisis on human health can be reduced significantly. First responders are able to provide more accurate aid.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Check the information included in FEAT. The tool provides extensive information on possible negative impacts on the (human) environment.
- *Be aware*
  - ✓ FEAT is a tool which provides balance between user-friendliness and detailed analysis. Where usability has been prioritised, some elements of complexity may have been lost. The user should take this into account.

### More information

- ✓ [https://docs.unocha.org/sites/dms/Documents/FEAT\\_Version\\_1.1.pdf](https://docs.unocha.org/sites/dms/Documents/FEAT_Version_1.1.pdf) [31].

## 6.3 Tool C: Hazard identification tool (HIT)

### Source

Joint UNEP/OCHA Environment Unit

### Scope of application and level of bindingness

The Hazard Identification Tool (HIT) is a voluntary tool intended for policy makers. There is no legal obligation that HIT should be used in policy making or crisis management; as HIT is a non-binding tool.

### Content

The methodology used in HIT is the same as the methodology used in FEAT. HIT is complementary to FEAT and can be used in earlier phases of the crisis management cycle. FEAT is mainly used once a disaster has occurred, while HIT can be used to prevent or minimise the effects of a disaster.

The main aim of HIT is limiting the consequences of secondary risks. The tool focuses on big and obvious facilities and objects that may pose a risk for human health and nature. So, HIT describes sites that contain many hazardous materials and therefore might pose a serious risk. Once a list of hazardous sites has been drawn, measures aiming to minimise the potential negative effects might be taken. These measures will become part of a crisis management plan.

Similar to the methodology used in FEAT, HIT distinguishes different type of impacts:

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1. Direct impact on human health;
2. Direct impact on life-support functions and nature;
3. Long-term impacts on life-support functions, nature and humans.

### Applicability in crisis management

HIT is mainly used in the preparation and prevention phases of crisis management. The tool provides information in a structured manner regarding the potential secondary effects of hazardous plants etc. Based on the outcomes of the tool policy makers can make crisis management plans including actions and measures that aim to mitigate the potential negative impacts of these crises.

### Links with other tools, principles and regulations

As indicated above HIT is complementary to FEAT. The tools could be used jointly. HIT could also be seen in relation to Directive 2012/18/EU (see Instruction 9) which aims to reduce the potential negative impacts of major-accidents hazards (caused by plants etc.).

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ By using the tool the possible secondary negative environmental impacts resulting from a crisis can be reduced as thorough understanding of risks has been made. The ultimate aim of the instrument is to decrease the number of deaths and injuries resulting from secondary risks.
- *Affected environment?*
  - ✓ Main focus of HIT is on the human environment. However closely linked to reducing the number of deaths and injuries as a secondary result of a crisis, is reducing the negative impacts on nature and the built environment.
- *Influence of crisis management?*
  - ✓ HIT positively influences crisis management activities as based on HIT an overview of possible hazardous sites is already made and mitigating measures might have been taken.

### Positive impacts and opportunities

By using HIT properly the risk on disasters could be reduced and better prevention and preparedness plans can be made.

### Checklist for DRIVER partners

- *Do's*
  - ✓ The tool provides insights in the hazards which different sites might create. In preparing disaster response plans information from HIT needs to be included in order to limit the impact of secondary risks.

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- *Be aware*
  - ✓ HIT is only an identification tool. Therefore no immediate recommendations are made and the tool cannot be used directly in crisis management operations. A translation from the identification to the actual situation still needs to be made.

## More information

-

## 6.4 Tool D: UNHCR FRAME – The Environment in Refugee-related Operations

### Source

Framework for Assessing, Monitoring and Evaluating the Environment in Refugee-related Operations – adopted by UNHCR (2009).

UNHCR has prepared a collection of tools and guidance under a project known as FRAME – Framework for Assessing, Monitoring and Evaluating the Environment in Refugee-related Operations. UNHCR has decided to standardise environmental impact assessment (EIA) practice across its refugee-related operations by issuing this Handbook. A further reason supporting a common EA practice is the increasing number of governments that have laws and regulations requiring EAs for some of the typical actions undertaken by UNHCR, for example identifying a new site for a refugee population and developing often quite considerable infrastructure in and around this location. While the need to conduct an EA is still not rigorously imposed, it is likely that UNHCR will in future be required to implement such EAs, for a range of its actions, to meet national requirements.

### Scope of application and level of bindingness

Environmental assessment is an internationally established tool used to predict the environmental impacts of a proposed action before a decision is made to implement the action. In many countries, an EA is a legal requirement for certain types of proposed projects – including in some situations the construction of a new refugee camp/settlement or extension to an existing one. UNHCR FRAME reflects current international practice. If there is some doubt about whether a formal EA is required or not, it might be worthwhile carrying out a Rapid Environmental Assessment (REA). A REA will also – from the outset of an emergency – identify environmental concerns that may require immediate action or further investigation.

### Content

The UNHCR FRAME toolkit consists of seven modules:

Module I – Introduction

Module II – Environmental Assessment (EA)

Module III – Rapid Environmental Assessment (REA)

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Module IV – Community Environmental Action Planning

Module V – Environmental Indicator Framework

Module VII – Evaluation

**Tasks to be addressed when undertaking an EA (module II):**

Task 1 – Characteristics of the Proposed Action

Task 2 – Identify Impacts of Concern

Task 3 – Describe the Baseline Conditions

Task 4 – Predict Impacts

Task 5 – Assign Significance

Task 6 – Environmental Action Plan

Task 7 – Reporting

Task 8 – Decision-making

The REA (module III) provides a snapshot of the environmental situation at a given point in time and, through consultation with representatives from the local and refugee communities, and others if appropriate, can already begin to identify some of the main problems experienced or perceived. The REA may or may not involve much local participation, depending on the situation. During an emergency, for example, priority should be given to getting information to the emergency response team as quickly as possible; to influence decisions taken with regards to camp siting and layout, in particular, as experience shows that longer term environmental impact stems from decisions taken at this time.

**UNHCR REA checklists**

Checklist 1 – Situation Analysis.

Checklist 2 – Key Influencing Factors.

Checklist 3 – Environmental Situation.

Checklist 4 – Environmental Impacts of Relief Activities.

Checklist 5 – REA Results Summary

**Applicability in crisis management**

FRAME applies (EA and REA) to the use of environmental assessments for proposed actions that fall within the following types of assistance: emergency or emergencies; care and maintenance; voluntary repatriation; local settlement – assimilation in first country of asylum; and resettlement in a third country.

The REA in this toolkit has been designed to provide results within a maximum of 72 hours. It is based on information gathered from a wide range of sources, including a site visit. Best conducted by a team of 3-5 people (with one agreed leader), it does not require specific expertise in environmental management, although if one of the team members has such expertise then this is obviously an added bonus. The REA can be conducted at any phase of a relief operation, although it was designed initially for use in emergencies.

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## Links with other tools, principles and regulations

As indicated in Chapter 3 one of the basic principles in environmental protection is the obligation to conduct environmental impact assessments (EIAs). The FRAME toolkit can be seen as a dedicated approach to EIAs in case of a disaster.

## Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ Has the potential to identify the potential for future negative impacts on the environment and can therefore put in place measures to prevent them from occurring.
- *Affected environment?*
  - ✓ All environments in the area of the refugee camps, for example forests, rivers, agricultural.
- *Influence on crisis management?*
  - ✓ Can aid crisis management by mitigating further negative impacts from occurring.

## Positive impacts and opportunities

Early environmental assessments provide the opportunity to identify areas of the environment which are important to protect at the onset of a disaster response thereby preventing future harm to the environment which could occur during the response to the disaster.

## Checklist for DRIVER partners

- *Do's*
  - ✓ Use FRAME – Framework for Assessing, Monitoring and Evaluating the Environment in Refugee-related Operations.
- *Be aware*
  - ✓ The earlier the environment is assessed the greater the chance of preventing damage that could impact a society for generations to come.

## More information

- ✓ <http://www.unhcr.org/4a97d1039.html> [45].

## 6.5 Tool E: Guidelines for rapid environmental impact assessment in disasters

### Source

Developed by: Benfield Hazard Research Centre, University College London and CARE International  
 Funded by: Joint United Nations Environment Program/Office for the Coordination of Humanitarian Affairs Unit, Geneva; Royal Norwegian Ministry of Foreign Affairs; US Agency for International Development, Office of Foreign Disaster Assistance. Prepared by: Charles Kelly, Affiliate, Benfield Hazard Research Centre. April 2005.

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### Scope of application and level of bindingness

The Rapid Environmental Impact Assessment in Disaster (REA) is a tool to identify, define, and prioritize potential environmental impacts in disaster situations. A simple, consensus-based qualitative assessment process, involving narratives and rating tables, is used to identify and rank environmental issues and follow-up actions during a disaster. The REA is built around conducting simple analysis of information in the following areas:

- ✓ The general context of the disaster.
- ✓ Disaster related factors which may have an immediate impact on the environment.
- ✓ Possible immediate environmental impacts of disaster agents.
- ✓ Unmet basic needs of disaster survivors that could lead to adverse impact on the environment.
- ✓ Potential negative environmental consequences of relief operations.

The REA does not require expert knowledge. Primary REA users are people directly involved in disaster response operations, with a basic knowledge of the disaster management process but no background in environmental issues. The REA process can be used by disaster survivors with appropriate support. The best results are expected to come when the REA is completed with structured input from survivors and organizations providing relief assistance. Sections of the REA can also be used for needs assessment and environmental impact screening during relief project design and review.

### Content

The REA is based on the concept that identifying and incorporating environmental issues into the early stages of a disaster response will make relief activities more effective and lay a foundation for a more comprehensive and speedy rehabilitation and recovery. REA provide a means to define and prioritize potential environmental impacts in disaster situations. The Guidelines are composed of five main parts and ten supporting Annexes. The main parts include an Introduction to the REA, and modules on Organization and Community Level Assessments, Consolidation and Analysis of assessment results and Green Review of Relief Procurement. The Annexes include information sources, forms used in the assessment and information useful in managing the REA process.

A separate Quick Guide to the REA process is also available. The Quick Guide includes the rating forms and instructions found in the Guidelines but only a minimal amount of additional information on the REA process.

A Guidelines-based rapid environmental impact assessment can be conducted as a standalone exercise or as part of, and using information collected during, other standard disaster impact assessments. When done as part of another type of assessment the REA process should not result in any significant increase in workload in the field or during analysis.

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REA Module	Outcomes
Organization Level Assessment	Identification of critical environmental issues related to the disaster from the perspective of organizations providing relief and recovery assistance.
Community Level Assessment	Identification of critical environmental issues related to the disaster from the perspective of communities and groups affected by a disaster.
Consolidation and Analysis	An identification and prioritization of environmentally-linked issues involving significant immediate threat to lives, well-being and the environment.
Green Review of Relief Procurement	A screening of the procurement of relief commodities and services to minimize negative environmental impacts.

**Table 9: REA Modules and Outcomes**

### Applicability in crisis management

The REA is designed for use in all types of disaster situations, including natural, technological and political events. The REA can be used to provide input into a Monitoring and Evaluation (M&E) system. The REA does not replace an Environmental Impact Assessment (EIA), but fills a gap until an EIA is appropriate.

A REA can be used from shortly before a disaster up to 120 days after a disaster begins, or for any major stage-change in an extended crisis. The REA does not provide answers as to how to resolve environmental problems. It does provide sufficient information to allow those responding to a disaster to formulate common sense solutions to most issues identified. Where solutions are not evident, the REA provides sufficient information to request technical assistance or to advocate action by a third party.

### Links with other tools, principles and regulations

The REA is one of several initiatives to improve the linkages between sustainable environmental management and disaster response. Leaders in this area include United Nations Environment Program, the World Wide Fund for Nature and Benfield Hazard Research Centre. UNHCR has developed information and assessment tools for considering environmental impacts in refugee situations. See: FRAME – Framework for Assessing, Monitoring and Evaluating the Environment in Refugee-related Operations [45].

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ Positive when carried out well and followed-up sufficiently.
- *Affected environment?*
  - ✓ The REA applies to all types of environments.
- *Influence on crisis management?*
  - ✓ Helps accurateness of crisis responses.

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## Positive impacts and opportunities

By conducting an REA quickly crisis management response becomes more accurate, which in its turn leads to less environmental damage.

## Checklist for DRIVER partners

- *Do's*
  - ✓ In case of a crisis do carry out an REA. The REA will provide useful information and will make it easier to respond accurately to a crisis.
- *Be aware*
  - ✓ An REA is a tool to help improve crisis management responses. The tool does provide guidance; however the reality in the affected area might be more complex, be aware that the information collected in the REA might not correspond one on one with reality.

## More information

- [http://www.ifrc.org/PageFiles/95882/C.02.09.%20Guidelines%20for%20rapid%20Environmental%20Impact%20Assessment\\_CARE.pdf](http://www.ifrc.org/PageFiles/95882/C.02.09.%20Guidelines%20for%20rapid%20Environmental%20Impact%20Assessment_CARE.pdf) [39].

## 6.6 Tool F: Database of 3700 toxic substances

### Source

Swedish Civil Contingencies Agency (MSB)

### Scope of application and level of bindingness

RIB (the database of 3700 toxic substances) is a software tool designed to provide information on toxic substances. RIB is a non-binding tool.

### Content

RIB is a database with emergency/health/rescue/transport related information on 3000+ toxic substances. RIB is a decision support tool with many components including information about the handling of toxic substances. It also contains a tool (Dispersion Air) to calculate the dispersion of toxic condensed gas in accidents involving these substances. RIB also contains a tool (Dispersion Ground) to calculate the dispersion of liquid in the ground e.g. how a tank of diesel penetrates the ground.

### Applicability in crisis management

It's applicable to all phases of crisis management. The ability to map the dispersion of potential chemical releases can aid in planning where to evacuate people, ensuring they do not come into direct contact with hazardous chemicals, even as these move from where they are first released. RIB could also provide data to aid in the containment and handling of chemicals released providing

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information on appropriate protective clothing and breathing apparatus. Mapping the dispersion of chemicals released through air or ground provides information which could be used to plan containment to protect water bodies from contamination, reduce ground contamination and show areas where agricultural land would have the potential to come into contact with the chemicals.

### Links with other tools, principles and regulations

The RIB databases are filled with information on toxic substances consist of information gathered from regulators of transports (INDG, IMO, ADR/RID) as well as medical information from (Sweden's) National Board of Health and Safety. There is an integration (could be called a "link") from LUPP's command and control/logging feature to WIS which is a national web based information sharing system.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ Positive as the databases provide much information on the potential impacts of the toxic substances. Once it is established which toxic substance is released, one can quickly identify the (negative) impacts of the substance.
- *Affected environment?*
  - ✓ Air, ground, water.
- *Influence on crisis management?*
  - ✓ A tool for support in preparedness planning and crisis response. RIB has tools for command and control at local/tactical level that can share information with higher levels of command; it is one part of a larger system of systems for crisis management.

### Positive impacts and opportunities

Being able to predict the dispersion of toxic chemicals would positively influence crisis management as it would aid in the planning of where to evacuate people to and how, when and where to start disaster mitigation as well as removal and disposal of dangerous materials. RIB could provide data to aid in the containment and handling of chemicals released during a disaster which could then protect water bodies from contamination, reduce ground contamination, show areas where agricultural land would have the potential to come into contact with the chemicals.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Use RIB where there is the potential for release of toxic chemicals when structures become damaged.
- *Be aware*
  - ✓ This is a computer model and as such has limitations on the ground; real time monitoring would be needed in such a disaster.

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## More information

- Available in Swedish on the web at <http://rib.msb.se/Portal/Template/Pages/Kemi/Kemsearch.aspx> [43]

## 6.7 Tool G: DWR debris planning tool

### Source

Disaster Waste Recovery (UK)

### Scope of application and level of bindingness

Non-binding debris tool which provides management options for quantities of debris arising from crises. Applicable for both the preparedness, planning and response phase of crisis management.

### Content

The tool provides transport and cost options for debris management within specific urban environments and can be used to decide where to bring debris for disposal or recycling. Using transport and processing costs as well as labour requirements, the tool also provides the optimal economic and livelihood solutions. In certain geographical locations, and with appropriate data input, the tool can also predict and geolocate debris quantities produced in different disaster scenarios.

### Applicability in crisis management

Applicable to both the preparedness, planning, response and recovery phase (short- and long-term) of crisis management.

### Links with other tools, principles and regulations

No other links except input of debris quantities which can come from the HAZUS tool.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ Supports reduced negative impact on the environment by providing the optimal transport and disposal solutions as well as recycling of debris thus reducing the burden on the quarries (natural resources).
- *Affected environment?*
  - ✓ As above.
- *Influence on crisis management?*
  - ✓ Provides a more robust planning tool for managing debris.

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### Positive impacts and opportunities

By knowing the quantities of debris there are opportunities to establish livelihoods projects for the crisis affected communities such that they can regain their income. Also recycling of debris leads to less construction materials being required for the reconstruction process.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Use the debris tool to manage debris arising from the crisis.
  - ✓ Use the debris tool to create pre-disaster debris management plans.
- *Be aware*
  - ✓ Debris management is a key part of clearing critical and essential life saving routes in cities.

### More information

- Disaster Waste Recovery (DRIVER partner)

## 6.8 Tool H: Evacuation decisions tool

### Source

Faculty of social sciences, Free University, The Netherlands.

### Scope of application and level of bindingness

EvacuAid was created to provide an evacuation model for flooding in the Netherlands. EvacuAid is a non-binding software tool which can be used on a voluntary basis.

### Content

EvacuAid is a probabilistic evacuation model which can be used to estimate the potential loss of life for different strategies of mass evacuation for the scenario of flooding.

Evacuation can be defined as the organisation of and the movement to a (relatively) safe place in case of a threat. Evacuation reduces the number of people who are exposed to the direct consequences of a disaster. The risk of loss of life can be reduced by moving to a relatively safe place.

EvacuAid determines the success of different strategies of evacuation (as preventive evacuation or vertical evacuation) using a probabilistic approach. EvacuAid estimates the success of an evacuation before the evacuation has started, therefore the model can be used for emergency planning but also for strategic decision making in the period between detection of a threat and before the capacity of the environment is reduced by mass response (such as traffic jams).

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EvacuAid is based on an event tree that contains scenarios that represent all possible (known) situations and the probability of these scenarios. The contribution for these scenarios by the outcome can be influenced by changing the parameters:

1. Citizens response on a scale of 1 (worst case) to 5 (best case);
2. Response of authorities on a scale of 1 (worst case) to 5 (best case);
3. Adaptive use of the environment and infrastructure on a scale of 1 (worst case) to 5 (best case);
4. Available time (expected value per day including the probability for a day more or less) and including a reduction time for decision making;
5. Percentage of loss of life;
6. Flooding factor as a correction that not the entire area (dike ring) might flood;

Each scenario in the database contributes to the expected success of evacuation in the Netherlands. The tool could be further extended to other countries as well.

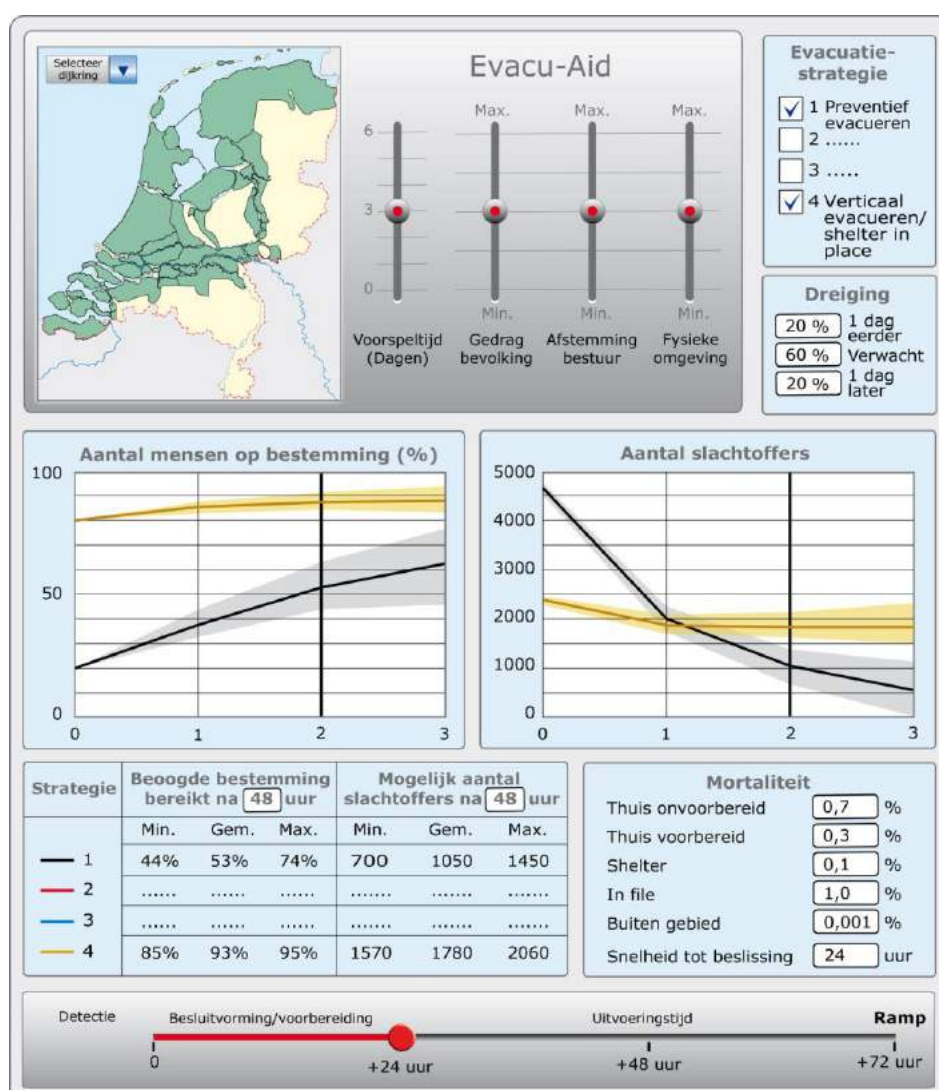


Figure 12: Impressions of the EvacuAid tool<sup>30</sup>

<sup>30</sup> Faculty of social sciences, Free University, The Netherlands

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### Applicability in crisis management

EvacuAid can be used for emergency planning and top strategic decision making for mass evacuation. Because EvacuAid is a probabilistic model it can be used to evaluate measures that improve forecasting, citizen response, response of authorities and to improve the use of the environment and infrastructure for different strategies for evacuation.

The main aim of the EvacuAid is to prepare areas for evacuation in the event of potential disaster. Therefore the tool is used early on in the crisis management cycle (i.e. preparedness and prevention). EvacuAid could assist a country or region in putting together a preparedness plan which will apply once a crisis occurs.

### Links with other tools, principles and regulations

This tool can be seen in relation to Directive 2007/60/EC on the mitigation of flood risks. The EvacuAid tool is a concrete example of a tool which can be used in order to mitigate the negative effects of flooding on people's livelihood.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ Positive; as knowing the numbers and locations of displaced people allows planning for protection of the environment which is particularly relevant in cases where the displaced people will remain for significant periods of time.
- *Affected environment?*
  - ✓ Large numbers of people moving to inhabit a new area will impact the environment. Being able to predict the number of people evacuated to a specific place allows planning to be put in place to mitigate damage to the environment in that area.
- *Influence on crisis management?*
  - ✓ EvacuAid positively contributes to crisis management by assisting in an area's preparedness planning.

### Positive impacts and opportunities

EvacuAid has the potential to reduce loss of life by providing data to assist in the planning of timely, effective evacuation in the event of a crisis.

Modelling the number of people evacuated would also provide numbers of internally displaced people.

### Checklist for DRIVER partners

- *Do's*

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- ✓ Use the tool to assist in evacuation scenarios in response to floods.
- *Be aware*
  - ✓ The tool has only been based on scenarios related to evacuation due to flooding.
  - ✓ The probabilities and scenarios inside the model are based on an accepted picture by experts but there is a worldwide lack of experience.

#### More information

- Faculty of social sciences, Free University, The Netherlands

## 6.9 Tool I: HAZUS tool

### Source

The US Federal Emergency Management Agency.

### Scope of application and level of bindingness

Non-binding software tool which is applicable for the planning and preparedness phase of crisis management by providing estimates on loss of life as well as infrastructure damage.

### Content

Hazus is a methodology that contains models for estimating potential losses from earthquakes, floods and hurricanes. Hazus uses Geographic Information Systems (GIS) technology to estimate physical, economic and social impacts of disasters.

### Applicability in crisis management

Applicable for the preparedness planning phase of crisis management by projecting loss of life and infrastructure damage.

### Links with other tools, principles and regulations

No links with other tools, legislation or principles was found.

### Impact on DRIVER (specific) and crisis management in general

- *Expected environmental impact?*
  - ✓ The estimate of building damage leads to estimates of debris and wastes requiring transport and management/disposal which in turn indicates potential environmental impact of such activities.
- *Affected environment?*
  - ✓ Once the debris quantities are projected, these can be used to determine disposal requirements which in turn can help to plan better for safer and proper debris disposal.
- *Influence on crisis management?*

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- ✓ It is a tool for support to the preparedness planning. Based on better preparedness plans, crisis management can become more effective.

### Positive impacts and opportunities

Knowing the projected amount of debris can help establish reuse and recycling initiatives and projects which in turn lead to reduced negative environmental impacts of the crisis response.

### Checklist for DRIVER partners

- *Do's*
  - ✓ Be aware of the HAZUS tool and integrate where possible as a preparedness tool in your disaster response plans.
- *Be aware*
  - ✓ Debris quantification is a key part of crisis preparedness planning.

### More information

- More information is available at: <https://www.fema.gov/hazus> [37]

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## Step 3: Application

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## 7 Use of instructions and tools

In Chapters 5 and 6 an overview of relevant instructions and environmental crisis management tools has been presented. In this chapter a link between this selection of instructions and tools on the one hand and DRIVER on the other is made. Different attributions have been made: (i) the annotated catalogue in relation to the DRIVER objectives and (ii) the annotated catalogue in relation to DRIVER partners. The structure is presented in the figure below.

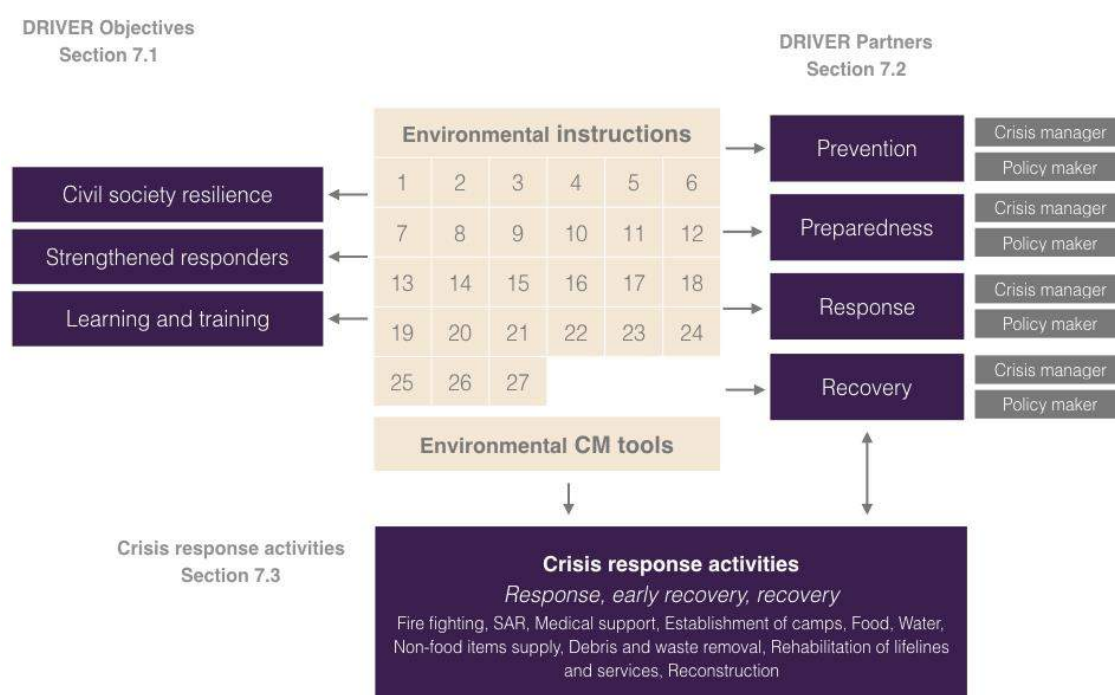


Figure 13: Use of instructions and tools

Source: Ecorys (2016)

In the following sections the attribution along the two lines – DRIVER objectives and DRIVER partners – are described in further detail. Also, a specification for the key crisis response activities is made. A comprehensive summary of the instructions is presented in an overview table in section 7.4. This table can be used to quickly consult the do's and be aware's per instruction. For the full information on each instruction, please refer to the annotated catalogue itself (Step 2).

### 7.1 The catalogue in relation to the DRIVER objectives

The first attribution is based on the overall DRIVER objectives. As indicated in Chapter 1, DRIVER has three main objectives. The objectives are:

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- ✓ **Civil society resilience:** Improving civil society resilience so that local communities are better prepared to respond to, and recover from, a disaster;
- ✓ **Strengthened responders:** Strengthening first responders in terms of the crisis management solutions they have available to them;
- ✓ **Learning and training:** Training and learning solutions designed to enhance the capacities and capabilities of trainers and human resources professionals dealing with those involved in crisis management.

Not all instruction and tools will apply to all three objectives. Therefore, for each of the instructions and tools an assessment is made whether or not the instruction or tool applies to a specific objective. The result of this analysis is presented in the figure below.

A distinction can be made between specific instructions, general crisis management related instruction and high level instructions. The specific instructions relate to a specific crisis management activity, e.g. waste disposal in the crisis aftermath or flood prevention planning. The general crisis management related instructions cover instructions like acting in the spirit of solidarity and the do no harm principle. The high level instructions apply at all times and can be seen as overarching instructions that never should be violated. Examples related to general environmental protection.

As shown in the figure the number of applicable instructions per DRIVER objective differs. For the first objective, civil society resilience, the least number of instructions applies. Most applicable instructions are specific and help enable volunteers and society as whole to better prepare for and respond to a crisis situation. The number of applicable instructions for the second objective, strengthened responders is already more elaborated. The set of instructions that should be followed by the responders is already larger, especially as they role in crisis management is larger. For the third objective, learning and training, it is advised to include all instructions and tools into the training modules. By including the different instructions and tools, all actors included in those training sessions become aware of them. Especially this awareness raising will lead to less negative environmental impacts originating from crisis management activities.

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		Civil society resilience		
		Specific	General Crisis	High level
Instructions	7	4	2	
	9	12	3	
	11	13	15	
	22	14	17	
	23			
	24			
Tools	-			

		Strengthened responders		
		Specific	General Crisis	High level
Instructions	6	4	2	
	7	10	3	
	8	12	5	
	9	13	15	
	11	14	17	
	21	16		
	22	25		
	23			
	24			
	26			
	27			
Tools	A, B, C, D, E, H, G, H, I			

		Learning & Training		
		Specific	General Crisis	High level
Instructions	6	4	1	
	7	10	2	
	8	12	3	
	9	13	5	
	11	14	15	
	21	16	17	
	22	20	18	
	23	25	19	
	24			
	26			
	27			
Tools	A, B, C, D, E, H, G, H, I			

Figure 14: Instructions and tools linked to the three DRIVER Objectives

Source: Ecorys and DWR (2016)

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## 7.2 The catalogue in relation to DRIVER partners

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Within DRIVER mainly the solution providers and practitioners are involved. For these two groups the instructions provide useful guidance, however they feature on the background. Besides solution providers and practitioners, also first responders or crisis managers, and policy makers are involved in crisis management. The instructions and environmental crisis management tools can be used by the different stakeholders involved in crisis management.

In order to make the instructions and tools directly applicable a distinction in crisis management phases could be made (see Chapter 2). In our analysis we distinguish: prevention, preparedness, response and recovery. Different stakeholders may have different roles and need different instructions and tools per crisis management phase. Therefore a distinction has been between two stakeholder groups, i.e. the policy maker and the crises responders.

The DRIVER partners fall within the categories of solution providers and practitioners. However, in order to make the annotated catalogue on environmental impacts applicable to situations outside of DRIVER, in the categorisation we distinguish between the- generally used and recognisable – categories of crisis managers (first responders) and policy makers. As a result a distinction is made between instructions relevant for policy makers and instructions relevant for crisis managers. Several instructions apply to both. The tools are not further divided as they are available to both.

Aim of the figure below is to present the outcomes of the analysis in a coherent way. Each instruction is linked to one or more phase of the crisis management cycle. All four phases - prevention, preparedness, response and recovery – are included in the overview. Careful response and recovery can contribute to resilience, especially when the build back better idea is incorporated in the latter stages.

Although the figure focuses strongly on instructions relevant for policy makers and crisis managers, other users in the CoU can use this overview as a source of inspiration and incorporate the instructions and tools in their day to day work. The more these instructions become common knowledge the easier it becomes to reduce the negative environmental impacts of crisis management activities. It will also lead to an improved resilience of society.

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Prevention					
Policy maker			Crisis manager		
Principles	1	9	Principles	2	12
	2	15		5	13
	3	17		7	15
	4	18		8	18
	5	19		9	22
	7	20			
	8				
Tools	A, C, D, F, G				

Preparedness					
Policy maker			Crisis manager		
Principles	1	9	Principles	2	12
	2	15		5	13
	3	17		7	15
	4	18		8	18
	5	19		9	22
	7	20			
	8				
Tools	A, C, D, E, F, G, H, I				

Response					
Policy maker			Crisis manager		
Principles	1	15	Principles	2	15
	2	16		5	16
	3	17		6	21
	4	19		9	22
	5	20		10	23
	9	21		11	24
	10			12	25
				13	26
				14	27
Tools	A, B, C, D, E, F, G, H				

Recovery					
Policy maker			Crisis manager		
Principles	1	15	Principles	2	15
	2	17		5	23
	3	18		7	24
	4	19		12	25
	5	20		13	26
	7			14	27
Tools	A, F, G, I				

Figure 15: Instructions and tools linked to the phases of crisis management

Source: Ecorys and DWR (2016)

### 7.3 The catalogue in relation to crisis response activities

This section aims to bring a practical oversight of the instructions and tools included in the preceding chapters for the purpose of providing crisis managers and policy makers within the DRIVER project with practical support on which instructions and tools are applicable to their specific work.

Thus, by combining the instructions and tools in a single place for ease of reference, a decision model has been developed to support the DRIVER members in understanding which are applicable to the various crisis management activities typically undertaken in crisis response and recovery phases.

#### Application to crisis response activities

In this section the instructions and tools are linked to specific crisis response activities. We have identified the following main crisis response activities (additional activities can be added once the DRIVER consortium members test and use the tool during the DRIVER trials):

- Fire Fighting
- Search & Rescue
- Medical Support
- Establishment of Camps/IDPs
- Food Supply
- Water Supply
- Non-Food items supply
- Debris and Waste removal
- Rehabilitation of lifelines and services (i.e. power)
- Reconstruction

Start of the analysis is the application of the crisis response activities to the DRIVER objectives:

- a. *Increasing Civil Resilience:* To support the development of civil resilience, the crisis managers will benefit from an understanding of the key environmental impacts that can arise from crisis response activities. It is appreciated that the balance between saving lives and sensitive infrastructure versus potential negative environmental impacts of response activities is a challenging dilemma, where this tool provides oversight of the relevant instructions that can be used in any trials, exercises and scenarios.

Further Civil Resilience is provided by building capabilities and capacities within the voluntary sector since first responders often include a large portion of volunteers. Since the volunteers may not be fulltime crisis responders and have less training than the Crisis Managers and Policy Makers, then the tool can be a useful support to crisis response volunteers who may find themselves in decision making situations.

- b. *Learning and Training:* A key component of training Crisis Managers and Crisis Policy Makers is to make them aware of all the facets and effects of various response activities. This tool provides that oversight required for potential negative and positive environmental impacts, including potential resulting liabilities.

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- c. *Improving Response*: For the Crisis Managers and Policy Makers working in Crisis Response, time is often a key constraint to decision making on the ground. Thus having a tool as that proposed will provide rapid oversight of applicable instructions and tools that are relevant to the users specific Crisis response activity, rather than a blanket overview for all crisis response activities.

By building on these objectives and integrating them with the crisis response activities into the DRIVER project, a demonstrable benefit will be the inclusion of stronger environmental awareness within crisis response. The knowledge and experience gained from learning and putting into practice the instructions and tools will support increased prevention and preparedness. An example of this could be an issue raised during a trial on which chemicals are used in firefighting, and if chemicals of potentially detrimental impact on the environment are used then these could be changed out for more benign chemicals as part of a preparedness initiative.

There are also potential spin-off benefits for adopting the instructions and tools in normal non-crisis times for general improved environmental management. Thus, knowing that the reconstruction of damaged infrastructure will require large quantities of construction materials (such as gravel) to be extracted from quarries, the option to use recycled debris from the crisis damaged buildings can lead to reduced burden on the natural resources as well as reduced transport (since the recycled debris is already at the point of use whilst the gravel from quarries requires import by trucks). This can stimulate increased recycling of construction and demolition waste in the area of preparedness and resilience, since this leads to reduced costs in providence of gravel as well as being the technology to be adopted post-crisis for reconstruction works.

### Focus on three key phases

The analysis tool has focussed on providing rapid oversight for three key phases of the crisis response: response, early recovery and recovery phases of the crisis response as follows:

- “Response” covers the immediate period following the crisis where such activities as Search and Rescue, firefighting etc. are applicable;
- “Early Recovery” phase then the period of time is typically 3 – 5 days post crisis when normally all survivors have been brought to safety and fires put out. The Early Recovery period thus focusses more on providing shelter, food, water and start of rehabilitating the services; and
- “Recovery” concerns the phase during which reconstruction works commence.

The instructions and tools presented in chapters 5 and 6 of this report have been allocated to each crisis response activity dependent on the specific instructions and tool’s applicability and value adding to crisis managers or policy makers working with that activity.

There are numerous instructions that are underpinning of environmental management as a whole, where these instructions have been allocated to their most relevant activity rather than to all activities. For example instruction 1: “Support sustainable development in Europe” is abroad reaching principle legislation which does not apply directly to the immediate response phase but

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more to the Recovery phases such as Rehabilitation of lifelines and services. This is due to the rehabilitation works will have a longer term impact on the environment compared to more short term activities such as providing non-food items in the response phase.

For the tools, then these have been allocated where they would provide most relevant and applicable support to a crisis manager or policy maker in reaching decisions within the providence of that specific activity. For example, tool B: “The Flash Environmental Assessment Tool (FEAT)” is useful for the location of IDP camps during the response phase to ensure that negative environmental impacts from the location of such camps are minimised.

Note that there is a number of tools in the response phase since many of these tools have been designed for use in crisis / disaster response where there may be a lack of coherent data and regulatory guidelines for such incidents. As time passes into early recovery and recovery, then the national laws and regulations will be more effective and relevant, thus reducing the need for specific crisis management tools.

The user can rapidly refer to the phase of response, i.e. response or recovery, and for each of the typical activities there is provided the applicable instruction and available tools that apply to that specific activity.

Once the user has identified the relevant instructions and tools, the user can then refer to that specific section of the tool to learn of the relevant advice. This advice includes the “do’s” and “be aware’s” without having to scroll through the entire instruction/tool template.

### DRIVER Application

These instructions and tools have been compiled, structured and formulated in such a way as to enable the DRIVER members to refer, during the Trials, directly to applicable instructions and tools that will have an impact on their decision making, either by supporting the outcome of the decision (tools) or informing the regulatory and legislative basis upon which the specific decision is being made within a crisis activity. It is believed that by structuring the instructions and tools into the tabular format, the DRIVER members have rapid access to the most relevant data, information and support in order to minimise potentially negative impacts on the environment as well as support the inclusion of positive environmental initiatives.

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Response	Instructions																												Tools								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		A	B	C	D	E	F	G	H	I
General	X	X	X		X							X																									
Fire fighting				X		X			X	X												X	X						X								
Search & rescue				X		X				X																	X										
Medical support				X					X	X			X									X					X							X			
Establishement of camps / IDPs						X				X			X	X								X				X		X		X	X			X			
Food supply						X				X			X	X								X				X		X		X	X						
Water supply						X				X			X	X								X				X		X		X	X						
Non-food items supply						X				X			X	X								X				X		X		X	X						
Debris and Waste removal						X							X	X	X	X						X		X	X		X	X		X	X						
Rehabilitation of lifelines and services						X							X	X	X	X						X	X			X	X	X		X	X						
Reconstruction																																					

Early recovery	Instructions																												Tools								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		A	B	C	D	E	F	G	H	I
General	X			X										X																							
Fire fighting																																					
Search & rescue																																					
Medical support																																					
Establishement of camps / IDPs		X	X		X								X					X								X	X	X									
Food supply		X	X		X							X	X													X		X									
Water supply		X	X		X							X	X													X		X									
Non-food items supply		X	X		X							X	X													X		X									
Debris and Waste removal		X	X		X							X	X		X					X				X	X		X	X				X	X				
Rehabilitation of lifelines and services		X	X		X								X				X			X						X		X									
Reconstruction																																					

Recovery	Instructions																												Tools								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		A	B	C	D	E	F	G	H	I
General	X			X										X																							
Fire fighting																																					
Search & rescue																																					
Medical support																																					
Establishement of camps / IDPs		X	X		X		X					X	X					X								X	X	X									
Food supply												X	X													X											
Water supply		X	X		X							X	X													X											
Non-food items supply												X	X													X											
Debris and Waste removal		X	X		X							X	X		X		X			X				X	X	X	X	X		X							
Rehabilitation of lifelines and services		X	X		X								X		X		X	X	X	X					X												
Reconstruction		X	X		X		X					X	X		X		X																			X	

Figure 16: Instructions and tools linked per crisis response activity

Source: Ecorys and DWR (2016)

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## 7.4 Instructions' application

A further operationalisation of the environmental instructions is the assignment of the do's, don't and be aware's per instruction. This is presented in table 10. As shown in figure 16 this is the final step of Task 92.3. The objective of the final analysis is to make the instructions as tangible as possible. If instructions are identified as applicable to either a DRIVER objective and / or phase in crisis management / type of stakeholder (sections 7.1, 7.2 and 7.3) the table below provides how the instructions should work out in practice.

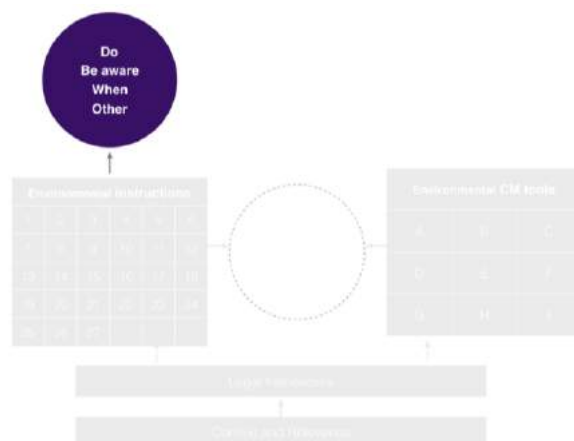


Figure 17: Instructions' application as part of Task 92.3

Source: Ecorys (2016)

All instructions found and analysed are summarised in the table below. Per instruction is indicated where the instruction originates from, what the implied do's and be aware's of the instruction are and to which phases of the crisis management it applies.

In the table below two additional criteria have been added. The first criterion indicates whether the instruction is a crisis activity or a more general instruction. Crisis activities are activities directly linked to activities undertaken in crisis management, e.g. providing first aid or firefighting actions. Contrary to crisis activities which have a direct link with crisis management, the general instructions are far more indirectly linked to crisis management. Characteristic for the general instructions is that they apply whether or not a crisis is at hand.

The second criterion added is the level of specificity regarding the formulation of the instruction. Most instructions are very broadly formulated, while only a few are very specific, e.g. in this case you are not allowed to do this and that.

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#	Source and summary	Do	Be aware	When?	Crisis activity / General principle?	Specific formulation?
1	TEU Art. 3.3 - sustainable development in Europe	* Ensure that all development is sustainable. Avoid, or at least minimise, the potential risks of a disaster.	* Do not deviate without a valid reason. Only a limited number of reasons might allow for deviation, e.g. the immediate saving of human lives with environmental damage as an unavoidable result.  * The instruction sets the conditions under which EU crisis management should be conducted. Not all crisis management tools can be used as they might negatively influence the environment. Only when a law exists, which allows for deviation of the instruction in case of a severe crisis, the tool might be used.	All phases	General	No
2	TEU Art. 3.3 - high level of protection and improvement of quality of environment	* Ensure that the environment is not unnecessarily damaged when responding to a crisis.	* Do not deviate without a valid reason. Only a limited number of reasons might allow for deviation, e.g. the immediate saving of human lives with environmental damage as an unavoidable result.  * The instruction sets the conditions under which EU crisis management should be conducted. Not all crisis management tools can be used as they might negatively influence the environment. Only when a law exists, which allows for deviation of the instruction in case of a severe crisis, the tool might be used.	All phases	General	No
3	TFEU Art. 11 Integration of environmental protection requirements is all Union's policies and activities	* Ensure that the environment is not unnecessarily damaged when responding to a crisis.	* In all policies and activities of the Union requirements for environmental protection are included. Be aware that you should focus on the protection of the environment even when it is not mentioned explicitly.	All phases	General	No
4	TFEU Art. 222 Solidarity clause All Union and MS shall act jointly in spirit of solidarity.	* Monitor situation at home and abroad. * Offer help to neighbours in need. * Ask for help when in crisis.	* Do not cause unnecessary additional damage to the environment of the already affected country. * When choosing CM tools environment impacts should be taken into account. * Be aware not to cause more damage than already done by the disaster. * Respect the environment of the country you are providing support to.	Response and Recovery (present in others as well)	General	No
5	Charter Art. 37 Environmental protection High level of environmental protection and improvement of quality of environment needs to be ensured.	* Ensure that you do not damage the environment when carrying out your activities. Where possible try to improve the current quality of the environment.	* The instruction always applies, only when thoroughly motivated arguments exist which are laid down in law, you might deviate from the instruction, however this will only rarely happen.	Preparedness and long-term recovery (present in others as well)	General	No
6	Art. 12 Self-sufficiency of modules First responders need to be able to take care for themselves without relying on resources in the affected area	* Ensure that the module that will be sent is indeed self-sufficient for the required period. Teams should at least have (see Article 12): - Appropriate shelter for the prevailing weather (i.e. depends on weather conditions) - Power generation and lightening possibilities - Sanitation and hygiene facilities for team members of the module - Food and water for the members - Medical or paramedic staff, facilities and supplies for the team members - Equipment storage and maintenance of the equipment - Communication equipment - Local transportation - Logistics, equipment and staff to start operations.	* Complying with the self-sufficiency requirements will also cause an environmental impact. The more supplies are brought to the crisis area, the more transport is needed, which will cause a negative environmental impact.	Response	Crisis activity	Yes

#	Source and summary	Do	Be aware	When?	Crisis activity / General principle?	Specific formulation?
		<p>* Check in the table in the instruction description (CH5), for each module that will be sent, (i) if the list above fully applies (right-hand column) and (ii) check how long the team needs to be self-sufficient (middle column)</p> <p>* By ensuring the self-sufficiency of the module you are able to reduce the immediate effect of the team's arrival in the crisis area.</p>				
7	<p>Art. 7.3 Flood risk management plans</p> <p>Plans should focus on prevention, protection and preparedness</p>	<p>* Check if the different flood management plans are available.</p> <p>- Please be aware that plans are made nationally, so for each individual EU Member State one needs to request the relevant flood management plans.</p> <p>*If yes, incorporate relevant information in your response plan and ensure that the measures you take are in line with these plans.</p>	<p>* Be aware that flood risk management plans might be drafted in the national language and that therefore, national experts need to be involved.</p>	Prevention and Preparedness	Crisis activity	Yes
8	<p>Art. 7.4 Flood risk management plans</p> <p>Need to be based on the interests of solidarity</p>	<p>* Check what is included in the different flood risk management plans about upstream and downstream countries and the risks assessed.</p> <p>* Where possible include this information in your own response plans in order to ensure that the measures you take are in line with these plans.</p>	<p>* The water resource might be cross-border and therefore your actions might affect not only the water in your own country, but also countries up- or downstream. In this case the principle of solidarity applies, which means you have to consider the possible effects of your measures on the neighbouring countries.</p> <p>* In case such effects are negative, try to use other measures (if available).</p> <p>- Assess the possibility beforehand.</p>	Prevention and Preparedness	Crisis activity	Yes
9	<p>Art. 8.3 Major-accident prevention policy</p> <p>Plans need to ensure high level of protection of human health and environment.</p>	<p>* Check if a major-accident prevention policy is in place for the relevant establishment. If yes, what does it say?</p> <p>* Check if an internal emergency plan is in place. If yes, what does it say?</p> <p>* Check if an external emergency plan is in place. If yes, what does it say?</p> <p>* If needed include measures and other relevant information into your own procedures and response plans.</p> <p>- Please be aware that such plans are made locally, so for each individual site a plan needs to be in place. Each individual plan needs to be considered.</p>	<p>* Situations might change before and during a disaster. Therefore, not all information included in the different plans might be relevant. A validation of information found needs to take place.</p> <p>* Not all risks might have been expected (and therefore been analysed in the plan). Be aware that new risks might materialise during a disaster.</p>	Prevention, Preparedness and Response	Crisis activity	Yes
10	<p>Art. 4.6 Exemptions</p> <p>In case of a disaster first responders cannot be held liable if damage is caused while trying to protect people and the environment from natural disasters.</p>		<p>* Although the exemption exists, it should be kept in mind that actions taken need to be proportional (i.e. choose the least damaging counter measure).</p> <p>* After the disaster it is still possible to be held liable, if it can be proven that disproportionate measures were taken. Especially, when less damaging measures were also available.</p>	Response	Crisis activity	Yes
11	<p>EU consensus on Humanitarian Aid</p> <p>Provision 35</p> <p>Aid, including food aid, should rely on local/regional resources as much as possible. By doing so additional</p>	<p>* Try to use as many local or regional resources as possible instead of brining all the resources from your own country or field of operation.</p>	<p>* It will not always be possible to use local resources when providing aid. This could be caused a lack of resources as a direct result of the crisis (critical infrastructure is destroyed) or a general lack of capabilities (the area never had the resources needed). In</p>	Response	Crisis activity	Yes

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#	Source and summary	Do	Be aware	When?	Crisis activity / General principle?	Specific formulation?
	environmental costs can be avoided.	* Use local capacities while providing the aid.	such cases providing the necessary aid is more important and the resources should be brought in from abroad.			
12	EU consensus on Humanitarian Aid Provision 42  Use the do no harm principle which also means that environmental and other long-term considerations must be taken into account.	* Adopt the ‘do no harm principle’ as much as possible during all phases of crisis management.	* It will not always be possible to use local resources when providing aid. This could be caused a lack of resources as a direct result of the crisis (critical infrastructure is destroyed) or a general lack of capabilities (the area never had the resources needed). In such cases providing the necessary aid is more important and the resources should be brought in from abroad.	Response and Recovery (present in others as well)	Crisis activity	No
13	EU consensus on Humanitarian Aid Annex criteria appropriateness and relevance  Aid provided should take into account immediate and long term impacts on the environment	* Carefully consider this instruction when undertaking crisis management activities.		Response and Recovery (present in others as well)	Crisis activity	No
14	EU consensus on Humanitarian Aid Annex Impact, connectedness, coherence and sustainability  Emergency relief should be seen as a solid foundation for longer term development including environmental development.	* Carefully consider this instruction when undertaking crisis management activities.		Response and Recovery	Crisis activity	Yes
15	International Convention on Human and Political rights Art. 1 Right to own means of subsistence  In no case may people be deprived of their own means of subsistence.	* Consider carefully to impacts of your response action on the environment. In case irreparable damage will be caused which reduced the opportunities of the people saved, don’t use this measure.	* In case you seriously violate this basic human right, the victims could bring you to justice.	Response and Recovery (present in others as well)	General	No
16	International Convention on Human and Political rights Art. 4.1 Derogation in case of public emergency  In case of public emergencies that threaten the life of the nations, some human rights might be temporarily be ceased.	* If it is absolutely necessary to invoke this article, ensure that it will be invoked for the minimum amount of time possible, because fundamental human rights do not apply and their non-application is non-desirable.	* Do not unnecessarily invoke this article. Be aware that invoking this article is a last resort and should be avoided for as long as possible.  * Be aware that, with invoking this article, basic human rights might no longer apply. This is an unwanted situation, which asks for the soonest repair.	Response	Crisis activity	Yes
17	Stockholm Declaration Principle 1. Fundamental right to life in an environment of quality	* Consider the impact of your measures on the environment and the livelihood of the people you are willing to help.	* Do not take measures that will affect the livelihood of people, especially when such measures cause irreversible negative impacts.	Recovery (present in others as well)	General	No
18	Stockholm Declaration Principle 15. Planning of human settlements and urbanisation  During planning activities adverse effects on the environment should be avoided.	* Consider this instruction while planning urban developments. The more carefully the impact of urbanisation on the environment is considered, the better the adverse impacts on the environment can be mitigated.  * Overall it will reduce the risk of a man-made or natural disaster.		Prevention and preparedness	General	Yes
19	Rio Declaration Principle 11. Obligation for effective environmental legislation  Indicating that all countries Member to the declaration should have effective environmental legislation in place.	* Each country needs to ensure that effective environmental legislation is in place.	* The adopted legislation might differ per country as the instruction allows for different rules based on the specific context in a country. Especially in less developed countries, fewer rules might apply. However this does not mean that responders helping out there, are allowed to cause more damage than somewhere were the rules are more strict.	All phases	General	No
20	Rio Declaration Principle 13. Liability and compensation clause	* Each country should have legislation in place concerning liability and compensation.	* Legislation might differ per country, so check for each country what the specific rules are.	All phases	General	Yes

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#	Source and summary	Do	Be aware	When?	Crisis activity / General principle?	Specific formulation?
	All participating countries are required to have law regarding the liability and compensation to victims of pollution and other environmental damage.					
21	Rio Declaration Principle 18. Notification  In case of a natural disaster or other emergency States have the obligation to warn (at least) their neighbouring countries.	* In case of a disaster warn surrounding countries as soon as possible.  * If your neighbour is in need, help him.		Response	Crisis activity	Yes
22	Guidelines for EA following Chemical Emergencies Par. 2.2 assessment criteria  Definition of when a chemical emergency has materialised and which environmental impacts can be expected.	* Ensure that a proper preparedness plan is in place;  * Ensure that the reliable sources indeed have the relevant information necessary for responding adequately to a crisis.	* Be aware of the existing classification systems in your own country.  * It is possible to ask for international assistance. Be aware that asking such assistance needs to be done as specific as possible to ensure minimum delays to identify suitable responders.	Preparedness and response (present in others as well)	Crisis activity	Yes
23	Disaster waste guidelines  Indicate how one should deal with waste caused by a disaster. Main aim is to deal with it in the most environmental friendly way.	* Read the guidelines to familiarise yourself with the guidance.  * Use, depending on the phase, one of the tools as described in the instruction.	* That some wastes are hazardous and can have a detrimental impact on both the health of the survivors from a crisis and on the environment.	Response and Recovery	Crisis activity	Yes
24	Debris and solid waste disposal guidance  Provides clear list of do's and don't regarding the disposal of solid and debris waste.	* Be aware of the training materials and pass to the wastes responsible person in crisis management.  <b>Do's in the first 72 hours</b> * Store useful materials for rebuilding or recovery efforts, such as wood, planks, bricks cement blocks and containers. * Look for recycling opportunities in local areas. * Protect yourself. Enter damaged buildings cautiously and only in necessary. Wear boots, gloves, dust masks, overalls and helmets, if available, Wash and, if possible, disinfect your hands regularly. * If you suspect waste to be dangerous, warn other workers and notify the authorities. - When possible, fence off the areas or secure the waste clearly in labelled containers.  * Remember the five stages of debris removal: - Recover the living - Recover the dead - Recover valuables - Clear for access - Clear for reconstruction and recycling  <b>Do's in the long run (disposal of waste)</b> * Consult local government and environmental authorities. Use existing waste handling facilities in the area before you set up a storage site. * Estimate the amount of waste expected, the space required for its disposal, and the types of waste to be dealt with * Instruct workers in the safe handling of hazardous materials, such	<b>Don'ts in the first 72 hours</b> * Avoid burning waste openly. If burning is necessary, locate a properly operated incinerator. * Don't mix wastes from hospitals and clinics with other wastes. Store waste from hospitals and clinics in sealed, labelled containers.  <b>Don'ts in the long run (disposal of waste)</b> * Never deposit waste near a watercourse, in a flooded area or close to an environmentally sensitive area such as a forest or a beach. * Don't store wastes near or upwind of human habitation, to avoid flies, rats and bad smells. * Don't leave wastes near hillsides where rainwater drainage can flood homes and camps. * Avoid burning waste openly. If necessary, use a properly operated incinerator to burn (healthcare) waste.  <b>Be aware</b> * That this is typically regulatory compliant requirement to handle and manage solid wastes properly.	Response and Recovery	Crisis activity	Yes

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#	Source and summary	Do	Be aware	When?	Crisis activity / General principle?	Specific formulation?
		as chemicals, healthcare wastes and biological materials. * Separate wastes according to their reusability – bricks, concrete, timber, metal, solid containers, etc. * Put temporary landfills where they can be easily accessed by large trucks. * If waste cannot be incinerated properly, then store it in areas with clay or solid rocks. Do not store it near wells and groundwater.				
25	Red cross code of conduct Principle 8 In providing aid one should pay particular attention to environmental concerns.	* EU crisis management could, where possible, take into account the Red Cross / Red Crescent principles, especially the one on environmental protection.		Response and recovery	General	No
26	Guidebook developed by a multinational working group consisting of representatives from the defence organisations of Finland, Sweden and The Unites States.	* If possible and desirable adopt the principles from the guidelines and incorporate them in your crisis management plans.  * Select the relevant environmental impact from the table below and select the appropriate management process to mitigate that impact.  * Distinguish between actions required on the short term (left column), actions required on the medium term (middle column) and actions required on the long run (right column). For table please refer to instruction description.		Response and recovery	Specific	Yes
27	Guidebook on Environmental Considerations during Military Operations. A Joint United States – Republic of South Africa Environmental Security Working Group Project	* If possible try to incorporate the most relevant principles into your crisis management plans.  * Select the relevant area from the table below and select the appropriate level of environmental protection (where possible)  * Distinguish between actions required on the short term (left column), actions required on the medium term (middle column) and actions required on the long run (right column). For table please refer to instruction description.		Response and recovery	Specific	Yes

Table 10: Summary of the 27 instructions

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## 8 Conclusions and recommendations

### 8.1 Conclusions

The link between crisis management and protecting the environment is multidimensional. A natural or man-made crisis may have by definition a damaging effect on the environment (for example flooding, heat waves and earthquakes). In the DRIVER context the environment is defined as nature, human health and the built environment. Effective crisis management may (shall) have a mitigating effect on the potential damage caused by a natural or man-made disaster. However, crisis management may also incur negative impacts on the environment (which is labelled as the negative tool effect of crisis management). And finally, crisis management may have indirect positive effects on the environment, such as the build back better approach.

Effective crisis management will maximize the mitigating effects and reduce the negative crisis management tool effects on the environment. The application of environmental laws, rules and principles aims to support effective crisis management with regards to its environmental impacts.

The existing EU, international and national rules and regulations with regard to the protecting of the environment are extensive and detailed. However, the majority of this body of regulations, rules and principles is not applicable to crisis management. Nevertheless, they are highly relevant to the promotion of resilience against (prevention of) natural and man-made crises. This is outside the scope of the DRIVER activities.

In order to ‘generate a systematic and annotated overview of relevant environmental laws and regulations as well as a methodology for applying this framework to the particular content of the DRIVER project’ (objective of Task 92.3) an analysis and subsequent conversion of environmental regulations and principles is be made.

Existing environmental crisis management tools are developed by a wide variety of organisations (such as United Nations and some of the DRIVER partners). None of the tools covers the entire crisis management cycle. Many of them are developed in relation to specific types of crises (such flooding, chemicals).

Some general conclusions on the annotated catalogue can be made:

- Each of the 27 instructions and 9 tools is relevant for the third objective of DRIVER: learning and training.
- The majority of the 27 instruction and all 9 tools are relevant for the second DRIVER objective (strengthened responders); exemptions are instructions that specifically address national governments ‘actions’.
- The first DRIVER objective (civil society resilience) is linked to about 50% of the instructions and none of the tools. In particular highly operational instructions (such as waste removal) are related to this DRIVER objective.
- The majority of the instructions and tools are relevant to every phase of crisis management (prevention, preparedness, response, recovery).

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- The first 5 instructions apply to all crisis management phases and most of the DRIVER objectives. These instructions are derived from the EU founding treaties.
- In the response and recovery phases, concrete and operational instructions are in particular relevant. These are for instance instructions that are relevant for assessing the impact of a chemical accident on the environment.

## 8.2 Recommendations

The objective of Task 92.3 was to develop an annotated overview and methodology for applying environmental laws and regulations to the DRIVER project. The instructions, tools and methodological framework as presented in this report, may be summarised along the following topics relevant to both crisis management and environmental protection:

- *General principles;*
- *People;*
- *Chemical;*
- *Waste;*
- *Water;*
- *Teams.*

Below, per category the main instructions and tools are presented. The recommendations are a narrative of the catalogue's content.

### *General principles*

- (Environmental) legislation per country might differ, so check for each country where you go what the specific rules are.
- Be aware that with regard to environmental legislation, fewer rules apply. However this does not mean the standards you apply can be lowered compared to the ones applied in developed countries.
- It is possible to deviate from environmental protection principles, however choices need to be thoroughly motivated.
- In principle crisis management activities should not cause more damage than already done by the disaster.
- Respect the environment of the country where you are providing aid.

The general tools are supported by several tools, like EERI and UNHCR-FRAME. EERI can be used to assess potential environmental risks and based on the results is the EERI policy makers can include the results in their prevention policies. Results from the UNHCR-FRAME can be used to improve preparedness plans.

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### People

- When providing aid try to use as many local resources as possible, however be aware that this is not always possible.
- In case it is not possible to use local resources, be aware that bringing the resources to the affected area will have a (potential) negative impact on the environment.
- Try not to violate basic human rights.
- Do not take measures that will affect the livelihood of the people affected, especially when your measures cause irreversible negative impacts.

### Chemical

- Although much information regarding potential chemical disasters is available, be aware that some risks might not have been included, as they were not foreseen at the time of assessment.
- Be aware that the actual situation might change during the crisis and unexpected things might happen.
- Each country has its own classification system for assessing the potential effects of chemical emergencies. Ensure you are aware of the system used in your country.
- If needed ask for international assistance to combat the chemical disaster. Be as precise as possible in order to minimise delays in assistance.

In the area of chemical accidents quite a number of tools have been developed. Most interesting ones are FEAT, HIT, RIB, HAZUS and REA. HIT can be used in the prevention and preparedness phase. These tools enable crisis managers to assess possible risks. FEAT and REA can both be used in the direct aftermath of a crisis. The REA provides a quick scan of potential hazards in general, while FEAT can support the assessment of hazardous materials and actions needed in the affected area. RIB can be used to find additional information quickly for hazardous substances identified. HAZUS can be used to assess the affected area.

### Waste

- (Disaster) waste might be hazardous and wrong handling of waste can have a detrimental impact on human health and the environment.
- How to properly manage and handle solid waste is often laid down in regulatory requirements.

The waste principles are supported by two tools; the DWR Debris tool and the UNHCR-FRAME. The first tool will help crisis managers to assess where debris is and which actions need to be taken to remove the debris properly. The UNHCR-FRAME can be used to assess the impact of waste on refugees.

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## Water

- Be aware that water is often crossing national borders and that actions taken at one place will have effects on other places along the waterway as well.
- In case of crisis affecting water resources that are cross-border its necessary to inform / warn neighbouring countries as well for potential negative impacts.
- In case crisis management measures have known negative impacts on water resources, try, if possible, to use other measures to reach the same result, without unnecessarily affect the environment.

Tools which could support the requirements found for water are EvacuAid, HAZUS and REA. The REA can be used to directly assess the potential effects of a crisis. A general overview of the main impacts of, for instance a flooding, can be quickly evaluated. The HAZUS tool could be used to establish the impact of for example a flooding on the area and its population. The EvacuAid tool could be used to ensure swift evacuation of people living in the flooded area and assess possible damage.

## Teams

- Specialised aid teams send in the direct aftermath of a crisis have to be self-sufficient. The requirements to be self-sufficient are laid down in EU law.
- It should be noted that such teams should not bring more resources than absolutely necessary as brining more resources will have a (potential) negative impact on the environment.

The above analyse shows that for most of the categories tools are in place that can support crisis managers and DRIVER partners in complying with the rules laid down in the different categories. However, for two groups no specific tools have been developed; for the categories people and teams.

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- [1] Charter on the fundamental rights of the European Union (2010/C 83 /02) adopted by the European Parliament, the Council and the Commission.
- [2] Commission implementing decision of 16 October 2014 laying down rules for the implementation of Decision No 1313/2013/EU of the European Parliament and of the Council on a Union Civil Protection Mechanism and repealing Commission Decisions 2004/277/EC, Euratom and 2007/606/EC, Euratom
- [3] Consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union 2012/C 326/01
- [4] Council Decision (EC) No 1257/96 of 20 June 1996 concerning humanitarian aid
- [5] Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitat Directive)
- [6] Decision No 1313/2013/EU of the European Parliament and of the Council of 17 December 2013 on a Union Civil Protection Mechanism
- [7] Declaration of the United Nations Conference on the Human Environment – Stockholm 1972
- [8] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy
- [9] Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage
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- [30] <https://docs.unocha.org/sites/dms/Documents/EnvEmRiskIndex.pdf>
- [31] [https://docs.unocha.org/sites/dms/Documents/FEAT\\_Version\\_1.1.pdf](https://docs.unocha.org/sites/dms/Documents/FEAT_Version_1.1.pdf)
- [32] [http://ec.europa.eu/environment/water/water-framework/index\\_en.html](http://ec.europa.eu/environment/water/water-framework/index_en.html)
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- [34] [http://www.defmin.fi/files/1256/Guidebook\\_final\\_printing\\_version.pdf](http://www.defmin.fi/files/1256/Guidebook_final_printing_version.pdf)
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# Annex I: EU legal framework

## Hierarchy of legislation, regulations and principles

This annex provides a concise description of the hierarchy within EU law, relating to the different sources of EU law. Also the relation between EU law and international law is explained and some guidance is provided on which rules will and which ones will not apply to EU member States.

### EU hierarchy

The European Union has its own legal system that consists of different sources of law. In total four main sources can be distinguished [22];

1. The EU founding treaties; i.e.
  - Treaty on European Union (TEU);
  - Treaty on the Functioning of the European Union (TFEU);
  - Charter of Fundamental Rights of the European Union<sup>31</sup>.
2. General principles of Union law;
3. International agreements;
4. Secondary legislation.

These sources together form the so-called European acquis.

Due to the variety in legal sources a hierarchy has been adopted in order to create a coherent system. At the top of the hierarchy the so-called primary EU legislation is placed. It consists of the three founding treaties [3] and the general principles of Union law (sources 1 and 2). This latter group is not explicitly laid down in the founding Treaties. The general principles are mainly developed by the Court of Justice of the European Union and through their case law these principles become part of the European Acquis. Although these principles are mainly derived from case law, they play a large role throughout EU legislation and policies.

The second layer in the hierarchy contains international agreements (source 3) concluded by the European Union. Based on Article 216 (1) TFEU the Union is allowed to conclude international agreements with third countries and international organisations. The Union may conclude an international agreement if: (i) one of the founding Treaties provides the possibility for it or (ii) the conclusion is necessary to achieve one of the goals referred in those Treaties. Often the conclusion of international agreements by the EU will be based on the subsidiarity principle. Once the Union has concluded an international agreement, the agreement will be binding for the Union and all its institutions, as well as for the Member States and their institutions. Because the agreement is concluded by the Union the agreement becomes an integral part of the European acquis (Article 216 (2) TFEU).

<sup>31</sup> This Charter is since the Lisbon Treaty (2009) part of the founding Treaties of the Union.

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The last layer in the European hierarchy consists of the so-called secondary legislation (source 4). This legislation is only valid if it is consistent with the primary legislation and international agreements. Both take precedence over secondary legislation. In case the rules laid down in secondary legislation are not in line with these sources higher up in the hierarchy, secondary legislation will not apply.

Different types of sources secondary legislation exist. Based on Article 288 TFEU the following five sources can be distinguished:

1. Regulations;
2. Directives;
3. Decisions;
4. Recommendations;
5. Opinions.

**Regulations** are binding in their entirety and are, once they have entered into force, directly applicable in all Member States. Member States are not allowed to undertake transposing activities. As a result, the rules laid down in a regulation are equal in all Member States. However, each Member State needs to ensure that no conflicting national rules and regulations still exist. Such rules and regulations need to be withdrawn.

**Directives** are also binding; however they aim to achieve a certain result and therefore leave room for Member State interpretation and transposition. Member States can choose the most appropriate form and methods to achieve the result aimed for. Therefore Member States need to transpose the rules laid down in the directive, through a transposing act, into their own legal system. As a results, the exact implementation of the rules laid down in a directive, can differ between Member States and differences can occur.

**Decisions** are, similar to regulations, binding in their entirety binding, however are only binding to someone specific. A decision can apply to a specific Member State, a legal person (e.g. a company) or a natural person (e.g. one specific EU residence). The decision often relates to a very specific situation for which the decision was needed. Because of their specific nature, decisions are not considered during the analysis.

**Recommendations** and **opinions** only provide guidance on how Union law can be interpreted. They do not lay down any rights or obligations themselves. Therefore, individuals cannot invoke rights based on them. On the other hand, Member State cannot challenge actions of individuals based on these recommendations and opinions. Also these legislative instruments are not further considered in the analysis.

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## International agreements and EU / MS participation

As described in the previous above, the European Union has the possibility of concluding international agreements under the condition that one of the founding treaties allows for this. Based on this competence the European Union has become member to several international treaties that have been concluded under the auspices of an international organisation, e.g. the UN or IMO.

However many more international agreements have been concluded to which the EU is not a member. In such cases Member States have the opportunity to decide whether or not they would like to become a party to such an agreement. In order to assess who is party to an international Convention, Treaty or agreement one needs to assess, whether [52]:

- The European Union is party to the agreement; if yes, the rules laid down in it will apply in all Member States; if not,
- The individual Member State is party to the agreement; if yes, the rules of the agreement might apply (see below). If not, the rules do not apply.

## Summary

The following figure presents a summary of the above described legal framework. The purple boxes indicate the different sources of EU legislation. The gold box on the left indicates international agreements concluded by Member States themselves and which might apply to all EU-28 Members. Because it is not always certain that international agreements concluded apply in all Member States the lines are dotted.

Besides those two sources of international legislation, each Member State has its own legal system in place. Due to the large variety of national legislation, all laws, principles and guidance provided on national level will not be considered in the analysis.

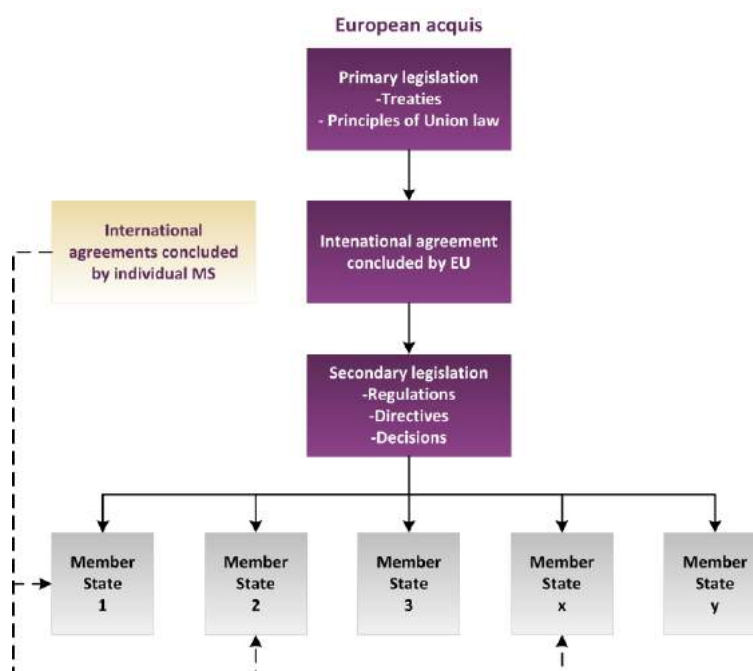


Figure 18: Overview of legal framework in place

Source: Ecorys (2015)

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