



FuE Project 206-22-300

Strategies for implementation of the requirements of the Water Framework Directive under Article 11 (3) (L) for prevention and reduction of the effects of unforeseeable water pollution of industrial plants

# Environmental Research Project

commissioned by the

**German Federal  
Environmental Agency**



undertaken by the

**Institute for Sanitation  
and Environment Hamburg**



**Institut für Hygiene und Umwelt**

Hamburger Landesinstitut für Lebensmittelsicherheit,  
Gesundheitsschutz und Umweltuntersuchungen

and the

**University of Leipzig  
Institute for Infrastructure  
und Resources Management**

UNIVERSITÄT LEIPZIG



# ***Task of the Project***

**The task of this project is to develop exemplary models for action schemes with respect to Art. 11 (3) (L) WFD:**

- to prevent significant losses of pollutants from technical installations and
- to prevent and/or to reduce the impact of accidental pollution incidents for example as a result of floods,
- including through systems to detect or give warning of such events including,
- in the case of accidents which could not reasonably have been foreseen, all appropriate measures to reduce the risk to aquatic ecosystems.



# *Project-Homepage*

**[www.alert-wfd.net](http://www.alert-wfd.net)**

We would like to inform you about the current stage of the project work at our homepage

- **download all presentations and conclusions of the Schkopau-workshop**
- **current versions of “Guidance for the implementation of WFD Article 11, 3 (I)”**
- **News etc.**





# Safety chain - Risk Management Water Path

## Safety chain - Risk Management Water Path

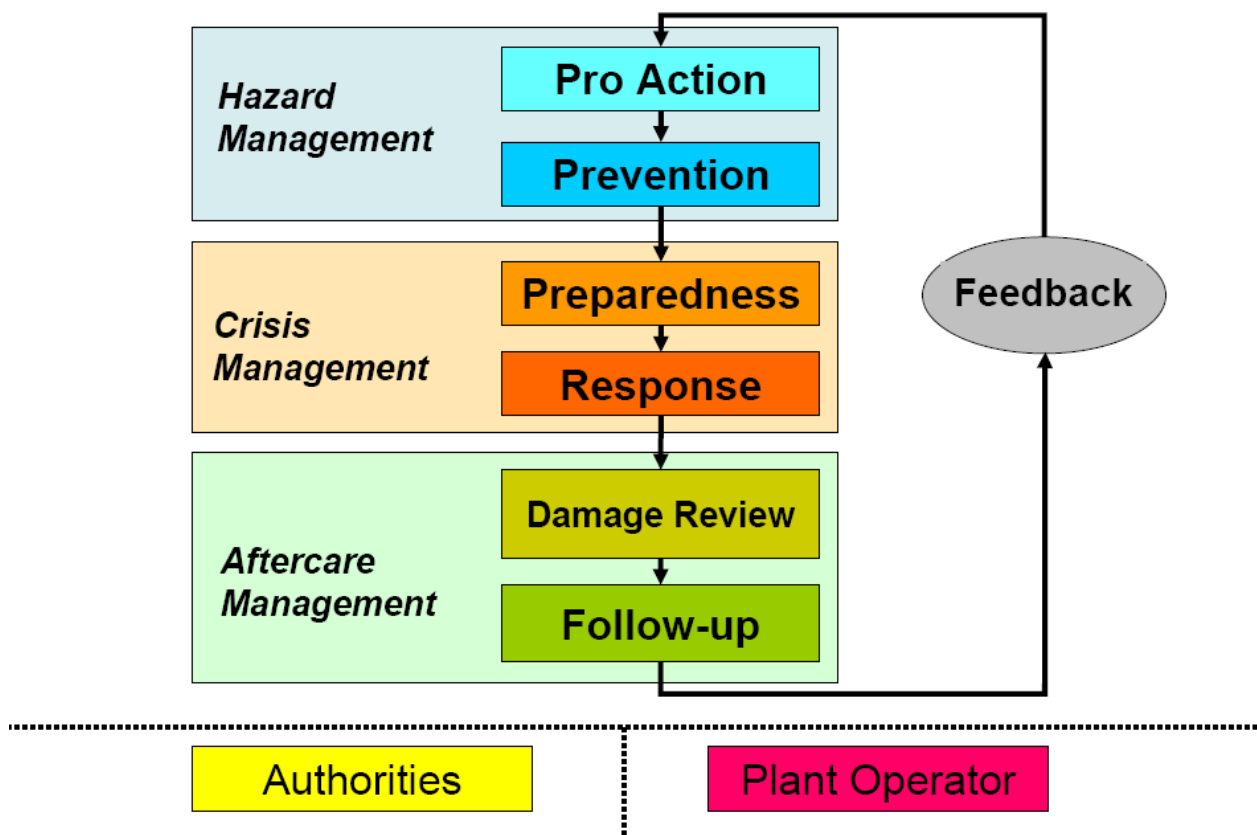
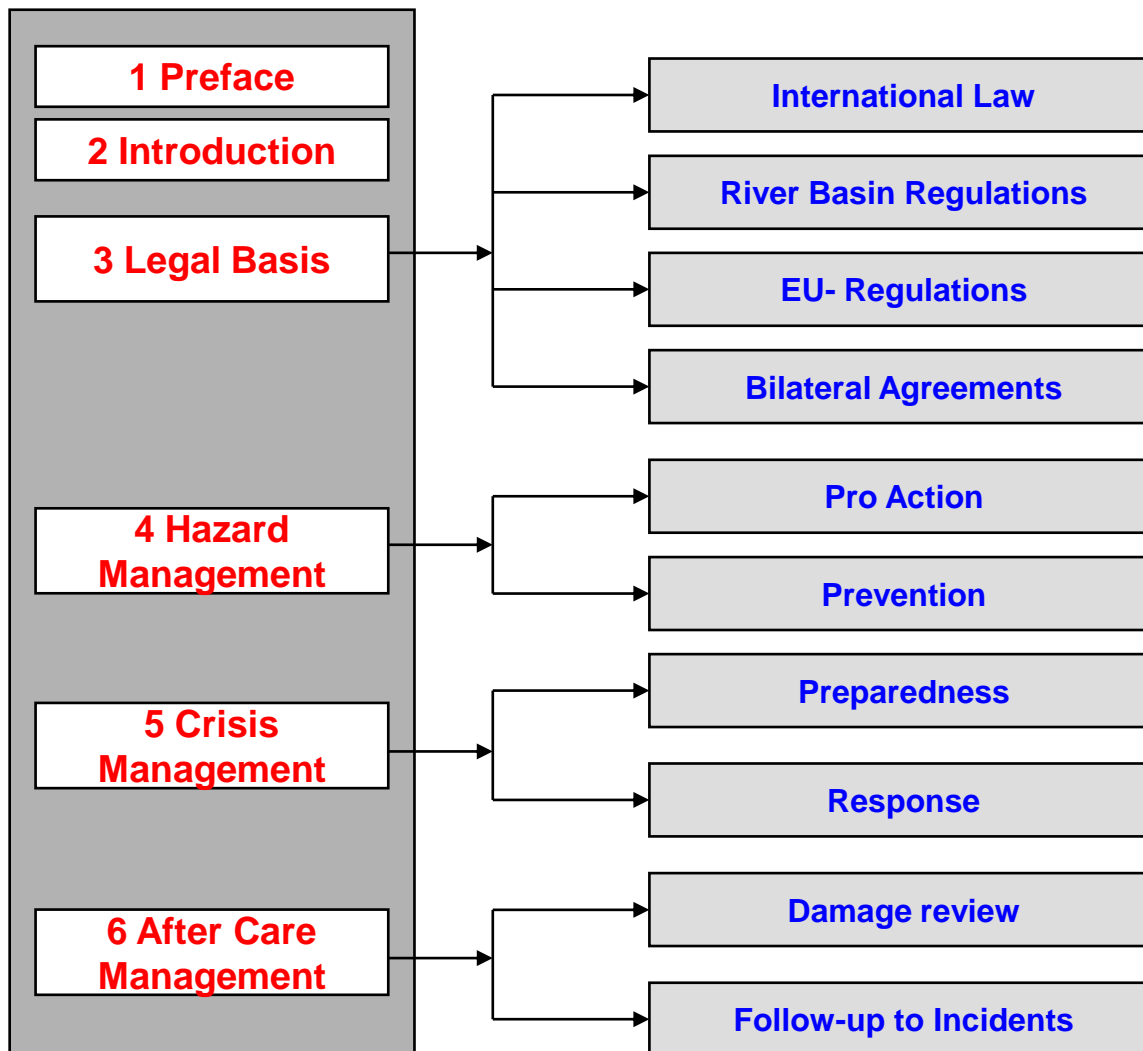


Figure 1 "Safety Chain" - Risk Management Water Path  
(responsibility: ■ Authority and ■ Plant Operator)



# Conceptual Structure

## Action Schemes with Respect to Art. 11 (3) (L) WFD

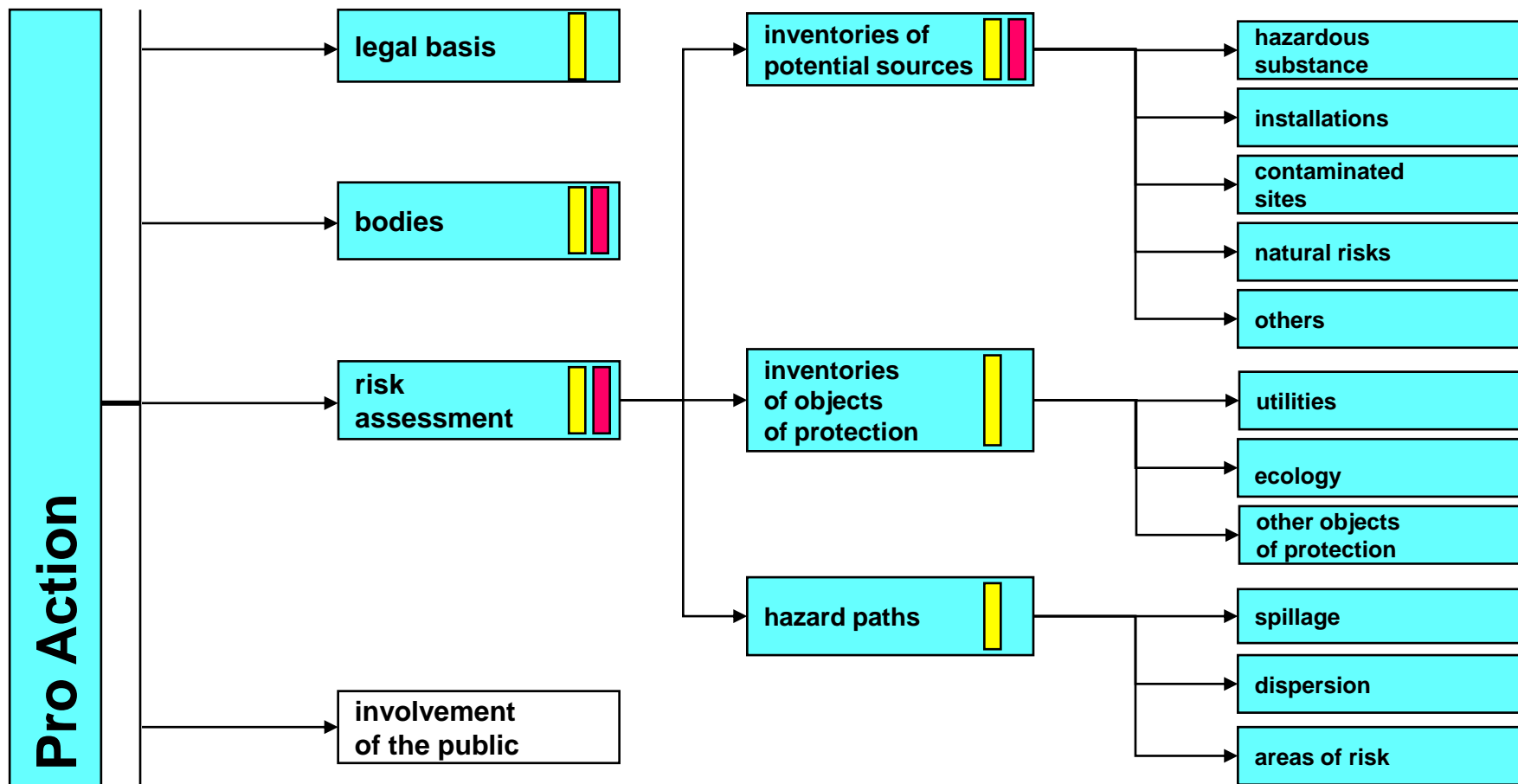




# Hazard Management – Pro Action

(responsibility: Authority, Plant Operator)

## Hazard Management



# Measures and Implementation examples

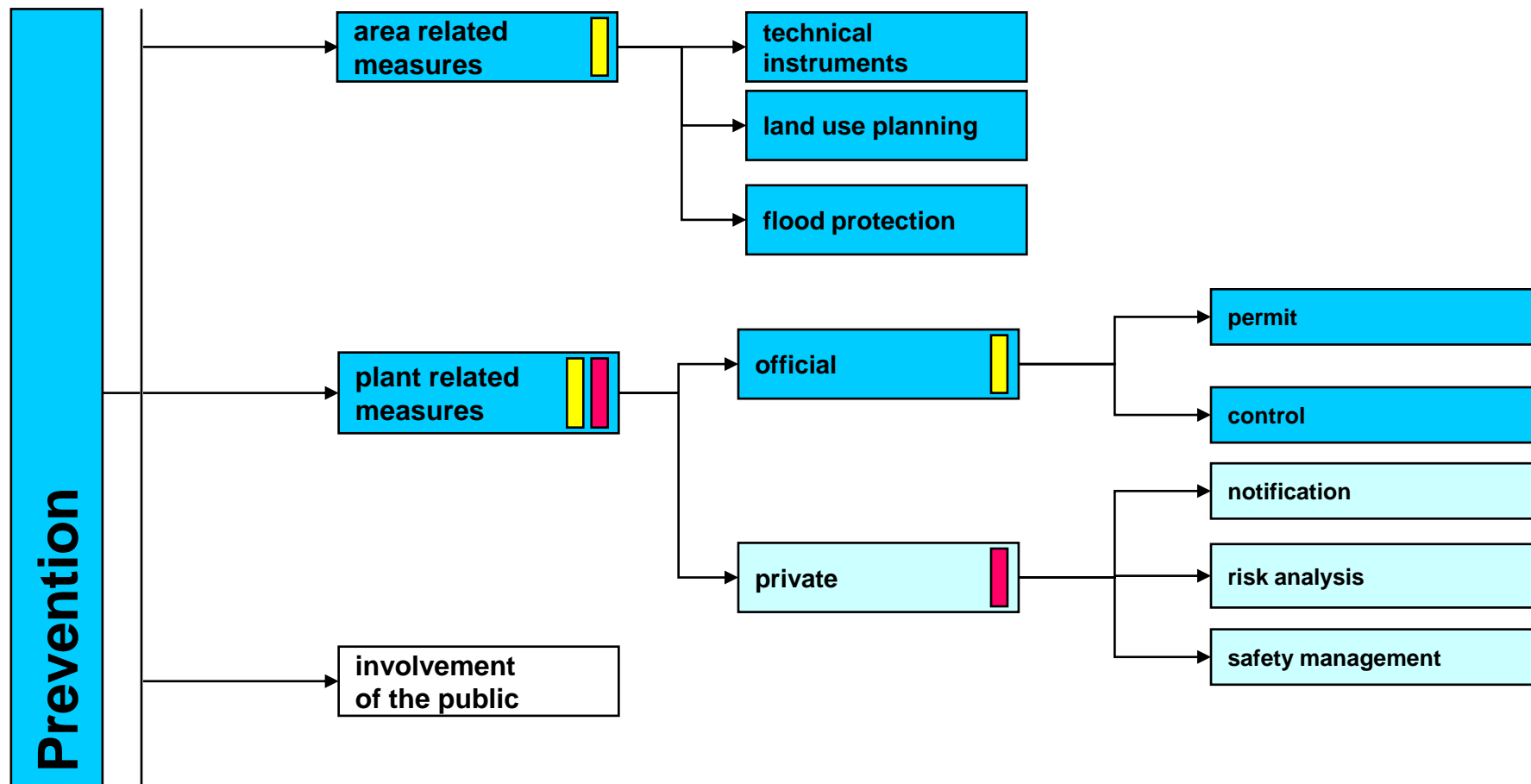
Hazard Management – Pro Action	
Measure	Implementation examples
Checking/Creating the necessary assessment criteria	WFD, 2006/11/EG, Seveso-D, REACH, GHS, WGK, EASE-project
Checking/Creating the necessary legal basis	Seveso-D, IPPC-D, WFD, WHG, VAwS
Checking/Creating basic safety requirements	Recommendations FGK, BREF, Technisches Regelwerk, DVGW, VDI
Establishing/engaging competent institutions and bodies	expert groups (FGG, national, international), professional association, JRC
Analysing basic hazard management requirements <ul style="list-style-type: none"> <li>• Making inventory of risk sources with regard to               <ul style="list-style-type: none"> <li>○ Substances</li> <li>○ Installations</li> <li>○ Contaminated sites</li> <li>○ Natural risks</li> <li>○ Other causes</li> </ul> </li> <li>• Inventory of potentially affected objects of protection with regard to               <ul style="list-style-type: none"> <li>○ Ecology</li> <li>○ Human use</li> <li>○ Other objects of protection</li> </ul> </li> <li>• Assessment of risks with regard to hazard paths               <ul style="list-style-type: none"> <li>○ Spillage</li> <li>○ Dispersion</li> <li>○ Areas of risk</li> </ul> </li> </ul>	ICPER – register of potential hazard plant ICPDR – potential accident risk spots ICPDR - old contaminated sites  flood- / earthquake maps map of uses, CORINE, maps of protection areas  GIS- based hazard forecast / modeling



# Hazard Management - Prevention

(responsibility:  Authority,  Plant Operator)

## Hazard Management





# Measures and Implementation examples

## Hazard Management – Prevention

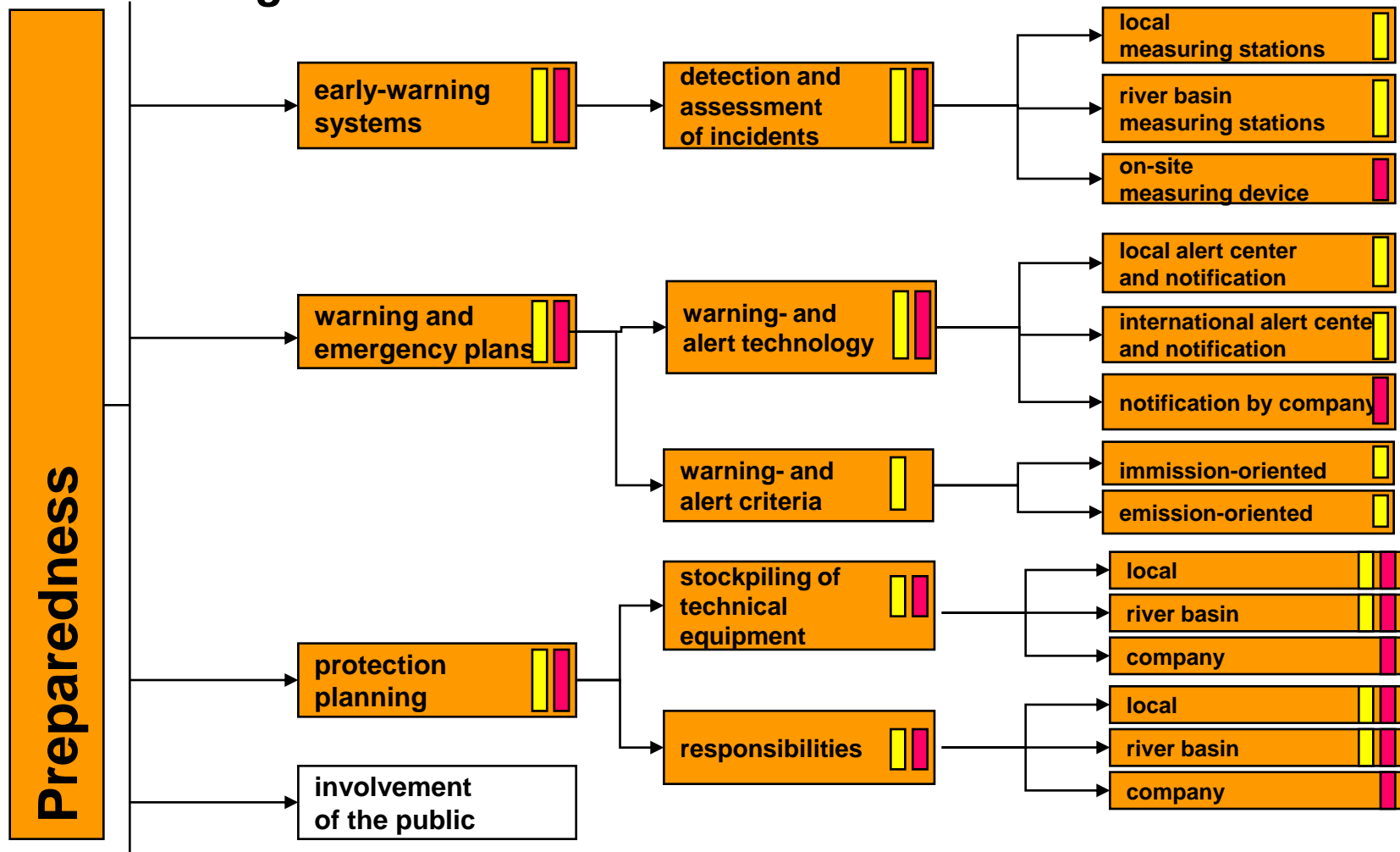
Measure	Implementation examples
Provision of technical (planning) instruments	VPS (Contingency Planning for Marine Pollution Control), ALAMO (simulation software)
Compulsory inclusion of Article 11 (3) I WFD measures in regional-policy and land-use planning	Land use planning (Seveso D)
District-related check for sensitivities and deficits, see Article 11 (3) I WFD	Flood action planning
Compulsory inclusion of Article 11 (3) I WFD measures in plant approval procedures	plant permission/special requirements/restriction, company safety management system,
Inspection and monitoring of plants with regard to relevant deficits, see Article 11 (3) I WFD	Inspektion, reporting commitment experts
promotion of responsible care	Transport-Unfall-Informations- und Hilfeleistungssystem (TUIS), VDI Kühlwasserkonzept,



# Crises Management - Preparedness

(responsibility: Authority, Plant Operator)

## Crisis Management



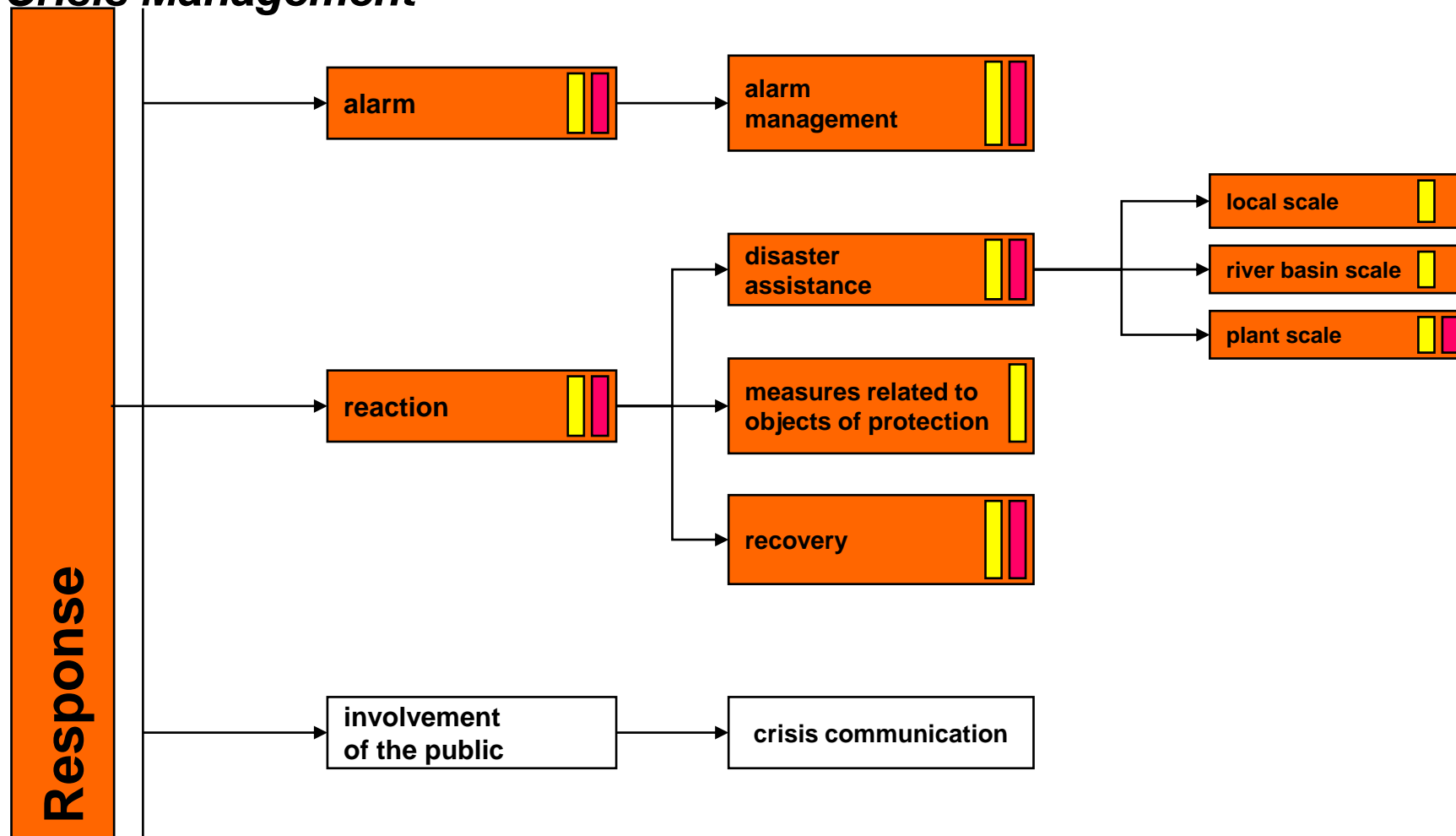
# Measures and Implementation examples

## Crisis Management – Preparedness

Measure	Implementation examples
Design and establishment of emission-related (plant-specific) early warning systems linked to the measurement and communication network for the river basin	Bayer, BASF
Design and establishment of immission-related (river-related) early warning systems <ul style="list-style-type: none"> <li>•Establishment of automatic measuring stations with incident detection and assessment systems</li> <li>•Establishment of measuring and communication networks for entire river basin district</li> </ul>	Early warning system Netherlands (Rhine/Meuse), Water Surveillance System Hamburg (WGMN)
Design and implementation of warning and emergency plans for the entire river basin <ul style="list-style-type: none"> <li>•Establishment of warning and emergency centres</li> <li>•Definition and technical realisation of warning and emergency paths</li> <li>•Definition of emission-related and immission-related warning and emergency thresholds</li> </ul>	IWEP of ICPER (Elbe), IWEP of ICPDR (Danube), IWEP of ICPR (Rhine), EASE-project
Design and implementation of disaster control plans	local disaster control plans
Provision of technical facilities and equipment for protective measures and damage containment <ul style="list-style-type: none"> <li>•at public level</li> <li>•at plant level</li> </ul>	Police, Fire Brigade, THW, oil barrier,
Ensuring readiness and functioning of crisis management instruments <ul style="list-style-type: none"> <li>•at public level</li> <li>•at plant level</li> </ul>	Quality management, Training, river basin practices



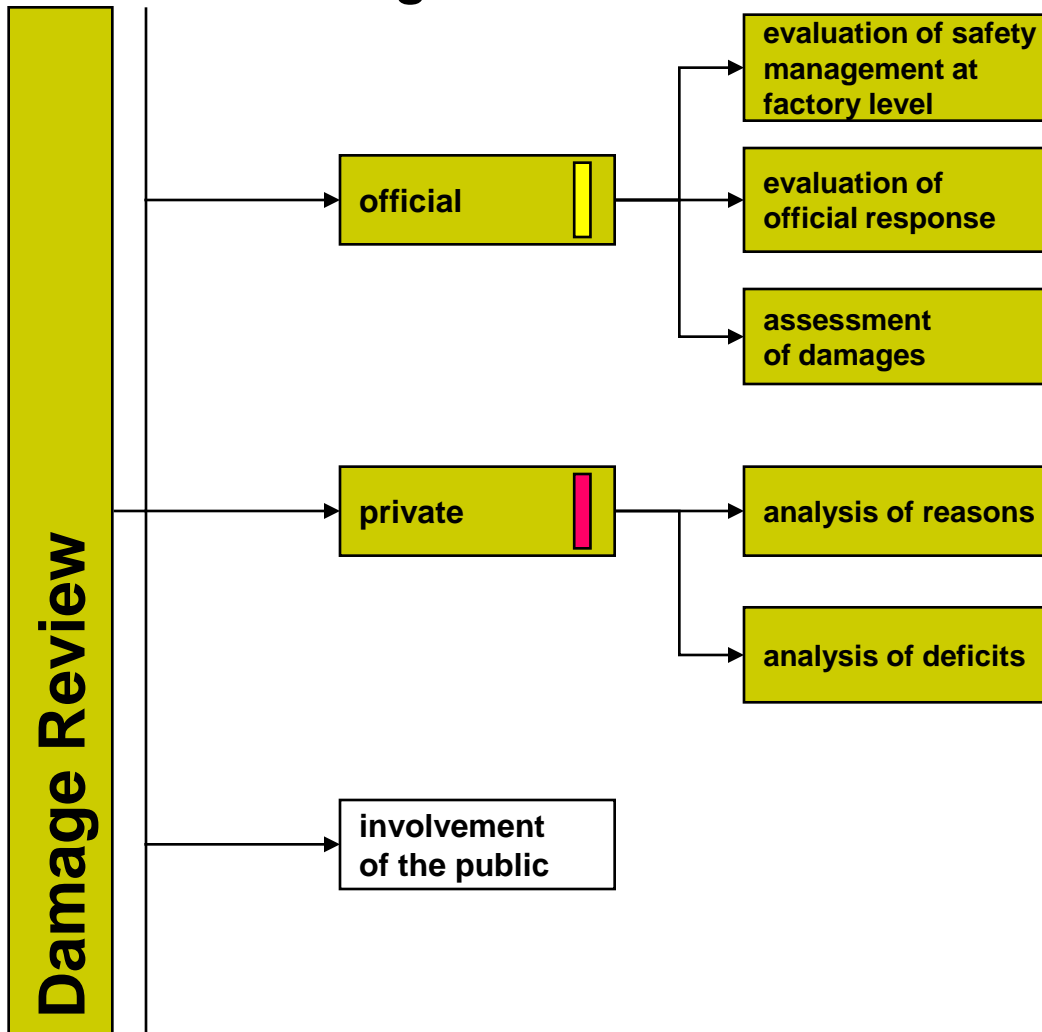
## Crisis Management



# Aftercare Management – Damage Review

(responsibility: ■ Authority, ■ Plant Operator)

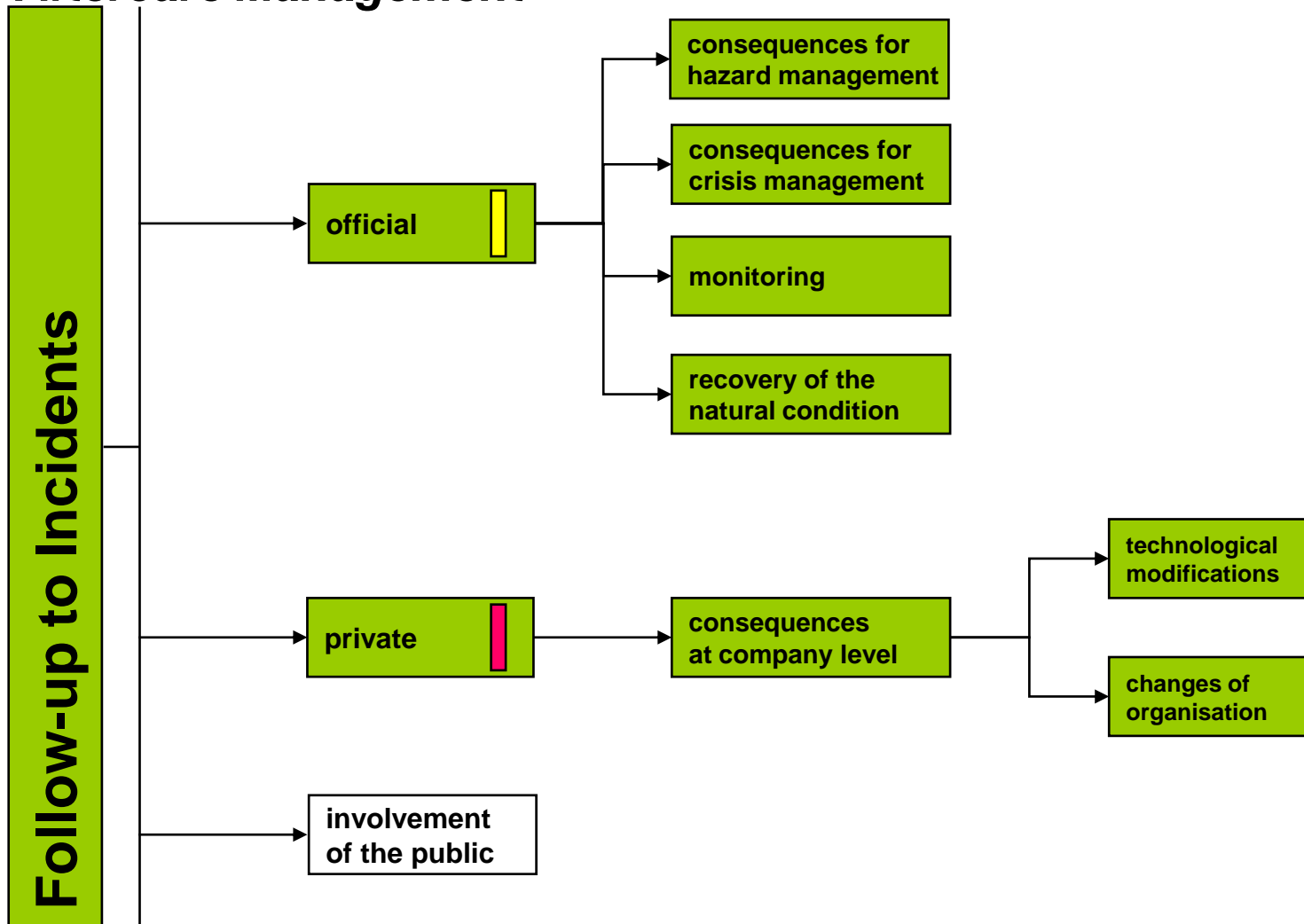
## Aftercare Management



# Aftercare Management – Follow-up

(responsibility: Authority, Plant Operator)

## Aftercare Management





# Measures and Implementation examples

After Care Management – Review + Follow-up	
Measure	Implementation examples
<p>Structures to ensure the necessary Following Up measures after an incident:</p> <ul style="list-style-type: none"> <li>•Official evaluation of plant-related safety management</li> <li>•Evaluation of official crisis management</li> <li>•Evaluation of impacts suffered</li> <li>•Analysis of plant-related causes and deficits</li> </ul>	<p>Leitfaden zur Erfassung, Aufklärung und Auswertung von Störfällen und Störungen des bestimmungsgemäßen Betriebs im Sinne der Störfall-Verordnung (LAI 2002), Konzept zur Erfassung und Auswertung sicherheitsbedeutsamer Ereignisse (SFK 1998)</p>
<p>Creation of structures that ensure incorporation of the evaluation results (“lessons learnt”) in the fields of</p> <ul style="list-style-type: none"> <li>•Hazard prevention</li> <li>•Crisis management</li> </ul> <p>Implementation of databases</p>	<p><u>Z</u>entrale <u>M</u>elde- und <u>A</u>uswertestelle (ZEMA/UBA) <u>M</u>ajor <u>A</u>ccident <u>R</u>eporting <u>S</u>ystem (MARS/EU)</p>



# Next Steps

## • Final Workshop:

from 13<sup>th</sup> to 15<sup>th</sup> of October 2008 in Lübeck / Germany

(please have a look at the internet:

[www.alert-wfd.net](http://www.alert-wfd.net) -> NEWS)



## • project-presentation at:

- UNECE, JEG (July 2008)

## • Guidance for the implementation of WFD Art. 11, 3 (I):

- end of 2008



