



Swedish Civil
Contingencies
Agency

Swedish crisis management and Floods Directive

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Integrated Flood Risk Management Seminar

Swedish Crisis Management system

- The Principle of responsibility
- The Principle of proximity
- The Principle of equality
- Geographical responsibility
- Aims to protect life and health, critical infrastructure and fundamental values from all types of hazards and risks through a comprehensive, risk-based, emergency preparedness programme including prevention, planning, preparedness, response, recovery and lessons learnt

Mandate for MSB

- The entire spectrum of threats and risks, from everyday accidents to major disasters
 - Local, regional, national, EU and international
- Before, during, and after the occurrence of emergencies, disasters and accidents
- **Coordinating** across sector and jurisdictional boundaries and levels of responsibility
- The MSB will not take over the responsibility of primary stakeholders. Their missions include the responsibility to coordinate with others as needed

MSB's Preventive work with Natural Disasters

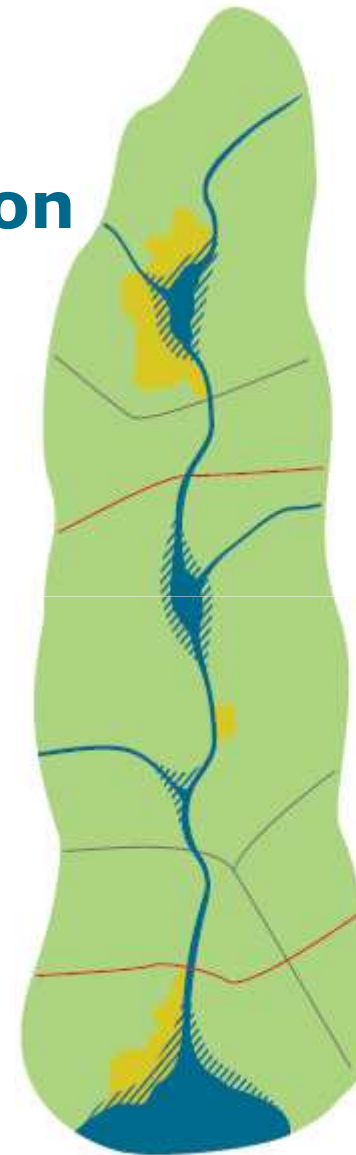
- General Stability Maps
- **General Flood Inundation Maps**
- Governmental Subsidies for preventive measures towards landslides and floodings
- Research and development
- Cooperation – on national and international level, EU and UN
- Information, Education and Training
- **River Coordination groups**
- Database Natural Disasters – Lessons Learned
- National Platform, established september 13th 2007
- Forest fire prognosis system
- **Water level prognosis system**
- **Depots with demountable barriers**
- **EU Flood Directive implementation, MSB responsible organisation**
- **Climate Change Adaptation**



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Swedish River Co-ordination groups, since 1995

- Risk management – lead from the local level
- Holistic approach at River Basin Level
- Many sectors and stakeholders as members
- County Administrative Board, chair



National Level

MSB commissioned to initiate
River Coordination Groups
Flood Inundation Maps
Governmental Subsidies for
Preventive Measures
Supervision and advice
Coordination

Regional Level

Chair of the River Coordination
Group
Referral for Land-use Planning
Coordination
Supervision

Municipal Level

Risk Management responsibility
Land-use Planning
Building Permit
Preventive Measures
Rescue Services

- County Boundary
- Municipal Boundary
- River
- Urban area
- Areas at risk of flooding



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General Flood Inundation Maps

- Governmental commission for MSB since 1998
- Areas at risk of flooding
- ~10% of Swedish rivers prioritised
- Two discharges
 - 100-year flood
 - highest estimated flood
- Hydraulic model
- GIS-data and Report
- 78 rivers mapped
- Water level prognosis system at an ongoing flood



EU Floods Directive 2007/60/EG



- Article 1

The purpose of this Directive is to establish a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences for *human health, the environment, cultural heritage and economic activity* associated with floods in the Community.

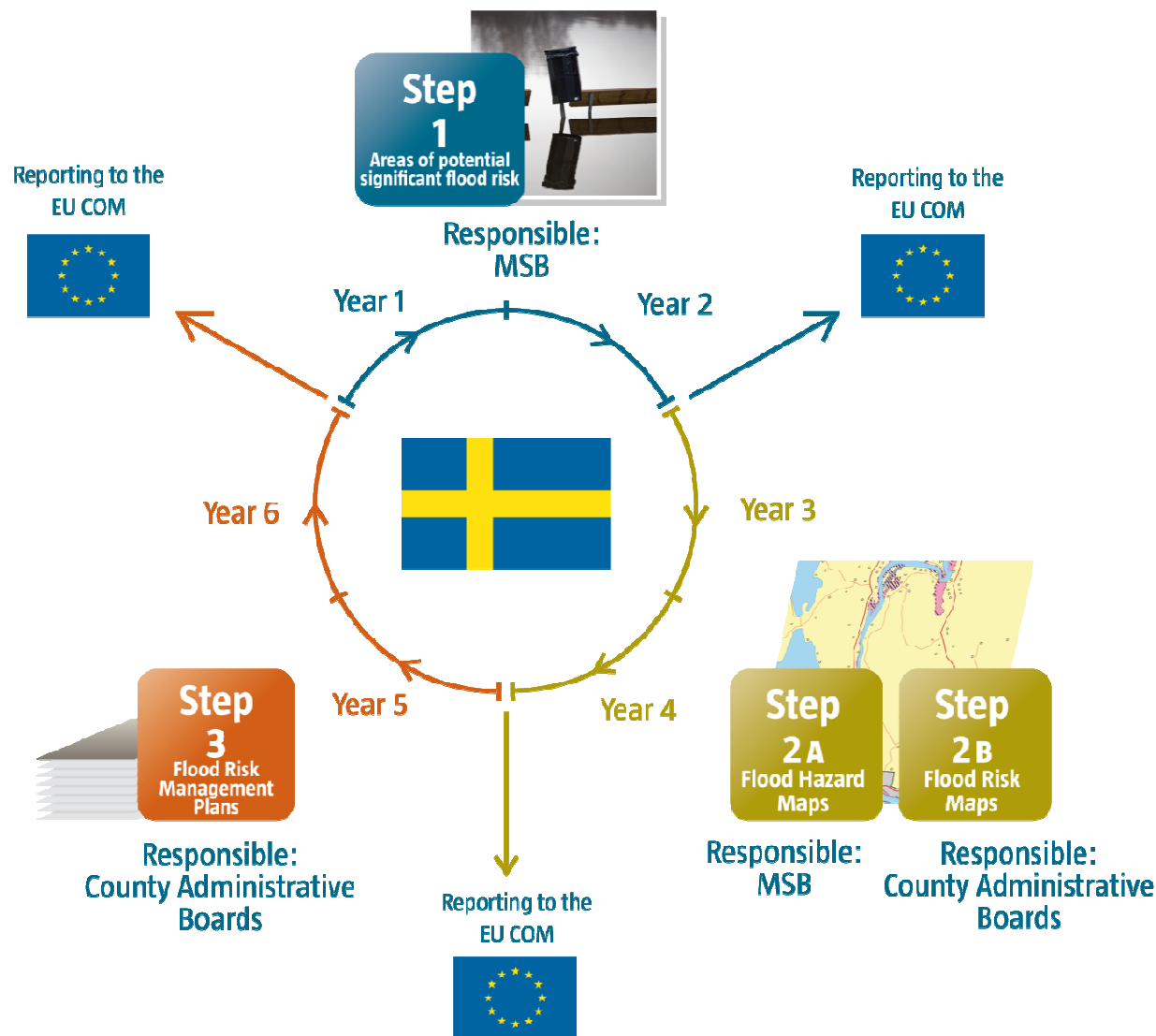
- Revision of each step every 6th year
- Cooperation and coordination with Finland and Norway, cross border
- MSB competent authority, responsible and reporting to the EU



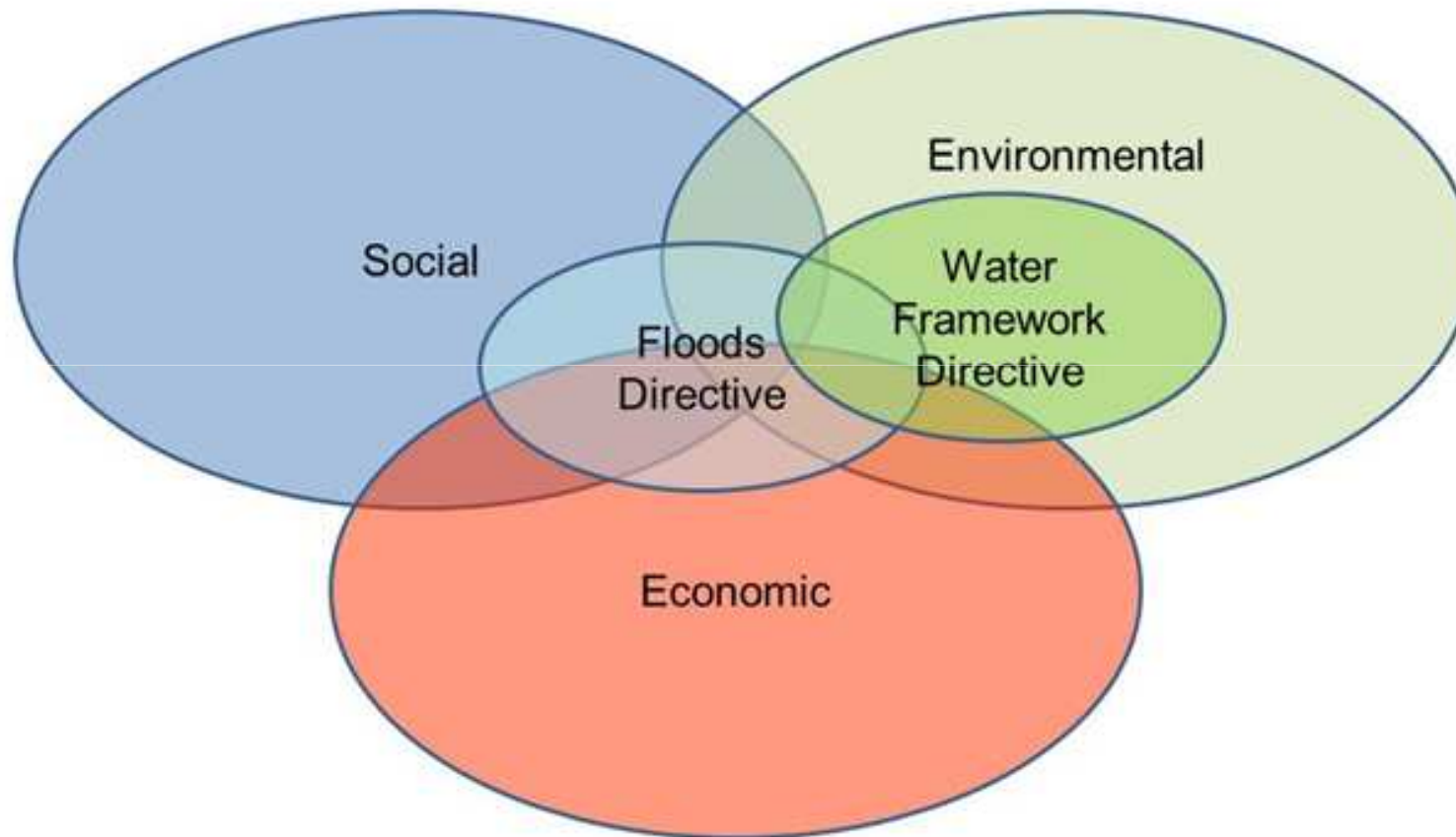
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EU directive increases Sweden's ability for dealing with floods

Floods Directive Process



Resource document FD - WFD



(Source: Adapted from Evers and Nyberg, 2013)

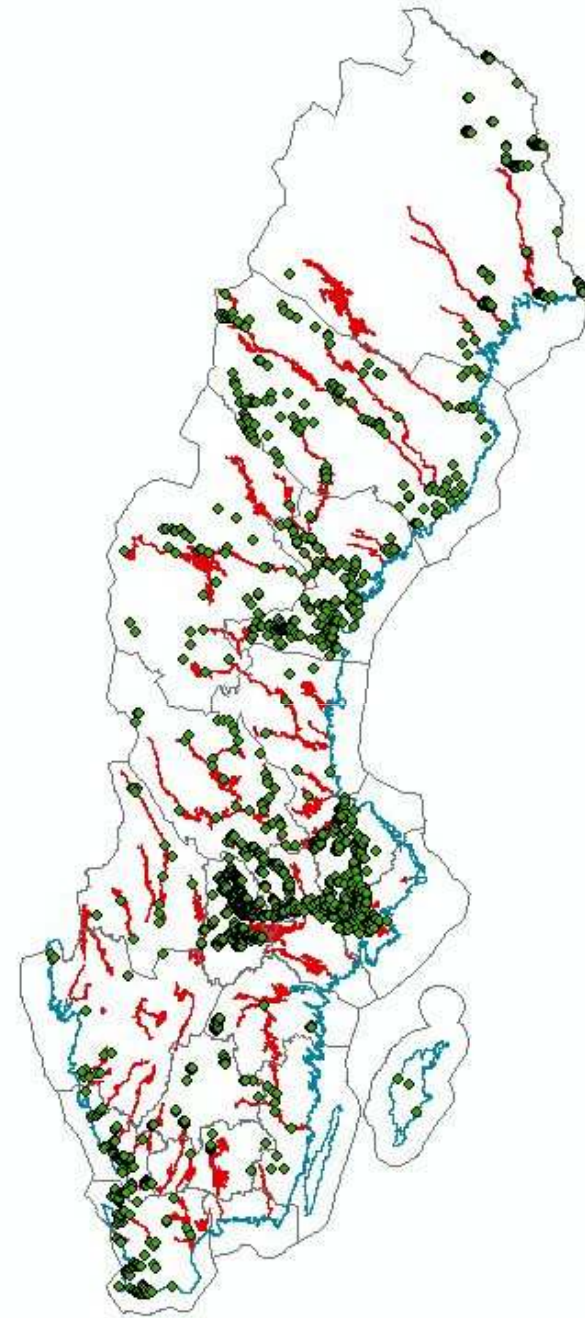
Figure 1.3 Aspects of sustainability addressed by the FD and WFD and their overlapping areas



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◆ Flooded areas 1901-2010,
190 floods

Flood Inundation maps

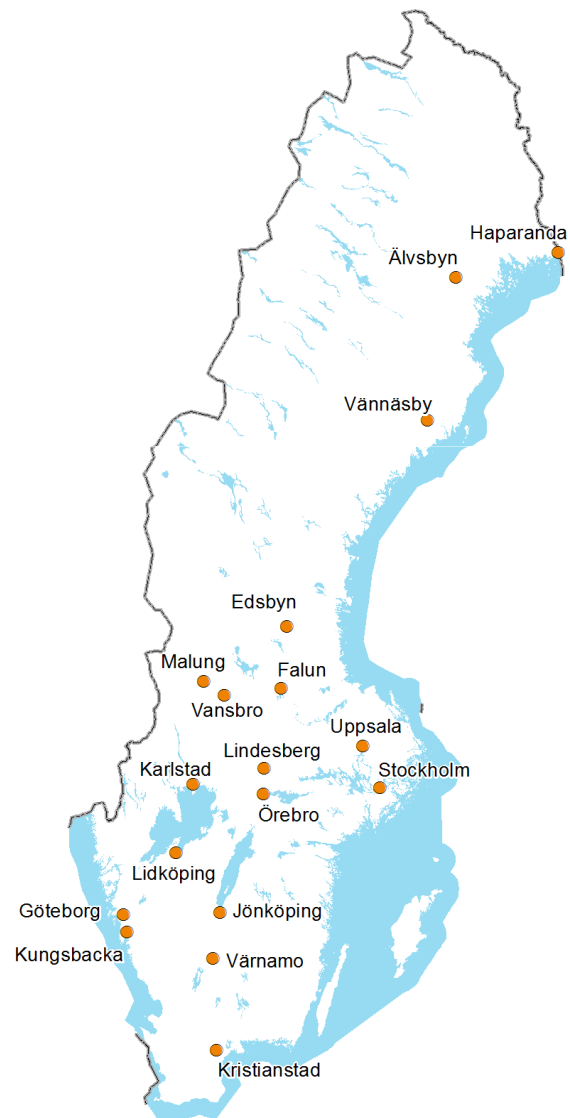


Analysed data per objective

Human health	Economic activity	Environment	Cultural heritage
Population	Workplaces	Nationalparks	World heritage site
Employees	Areas at chemical risk impact	Nature reserves	Archives
Drinking water wells)	Critical Infrastructure (railroads, roads, airports)	Natura 2000	Museum and Library
Vital societal functions	Protected water areas	Protected water areas	Memorial houses
Critical Infrastructure (railroads, roads, airports)		Areas at chemical risk impact	Churches
Protected water areas		MIFO (poluted ground areas)	Cultural reserve
			Fornlämningar



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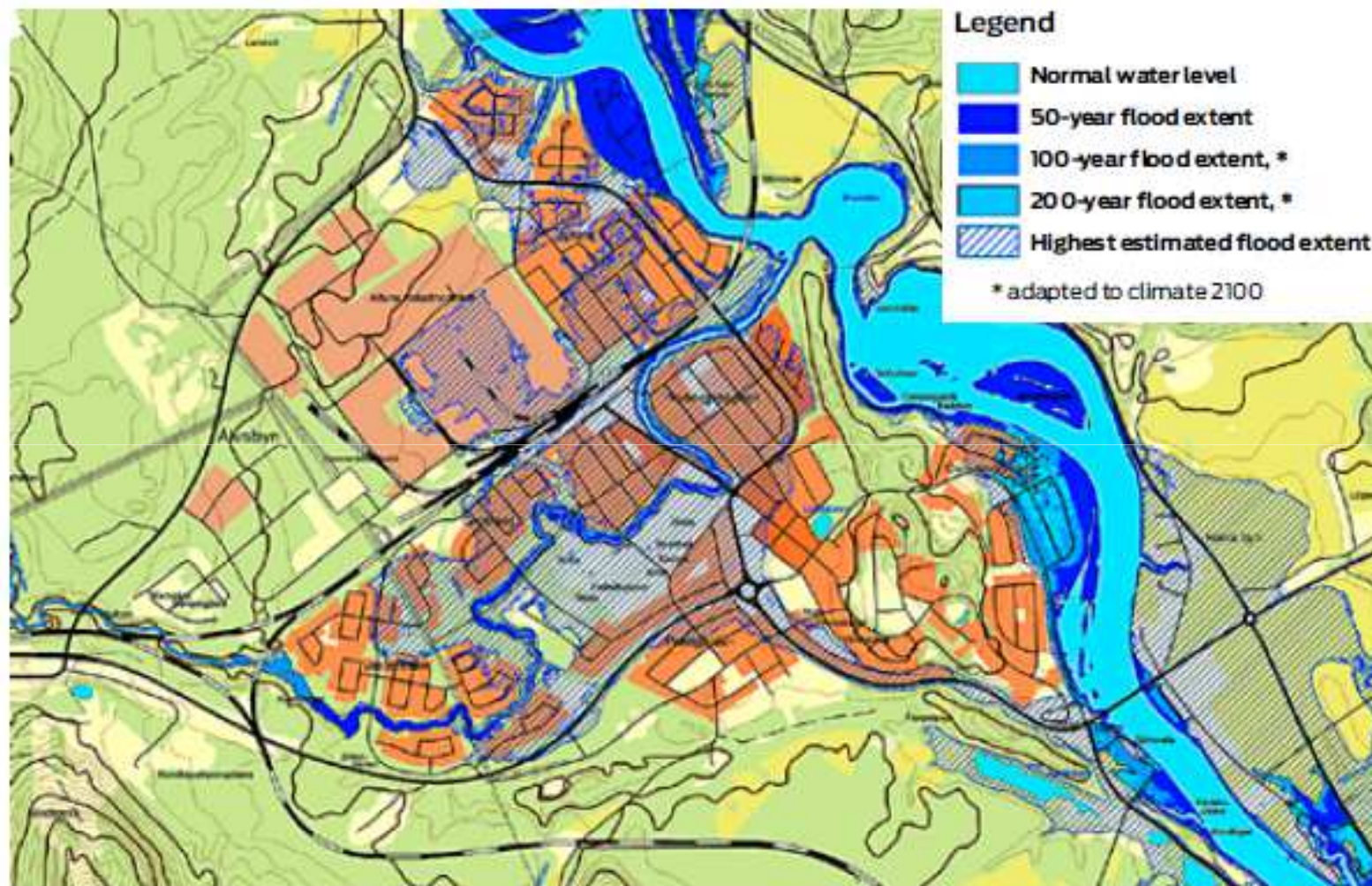


Results

- 18 areas of potential significant flood risk
- Reported to EU-COM
- New detailed flood inundation maps



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A detailed Flood Hazard Map for one of the 18 areas identified in Sweden with potential significant flood risk. The map is produced with a 2D hydraulic model for 4 different discharges and the new very accurate digital elevation model (resolution 2x2m) for Sweden.



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New Consequences – CC and change in land-use



Same place –
new
consequences

- View from Rudsberget
1916 och 2007



By courtesy
City of
Karlstad



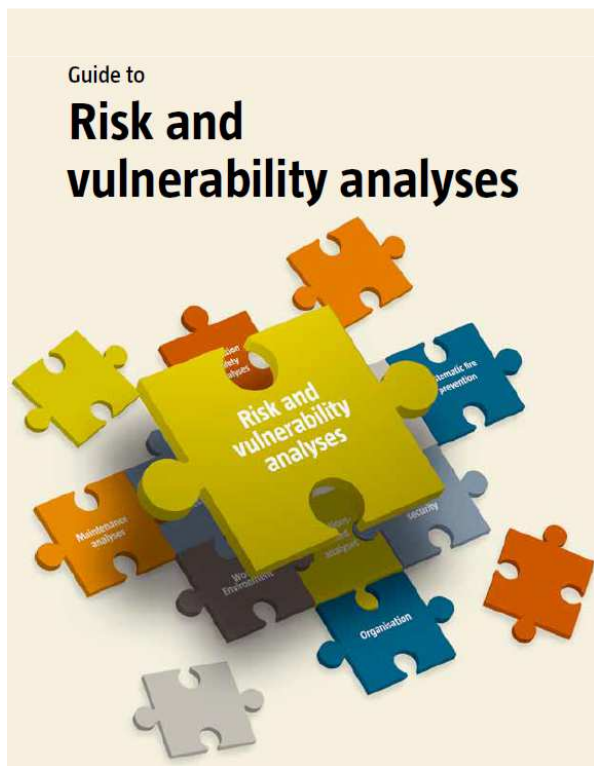
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Floods an integrated part of:

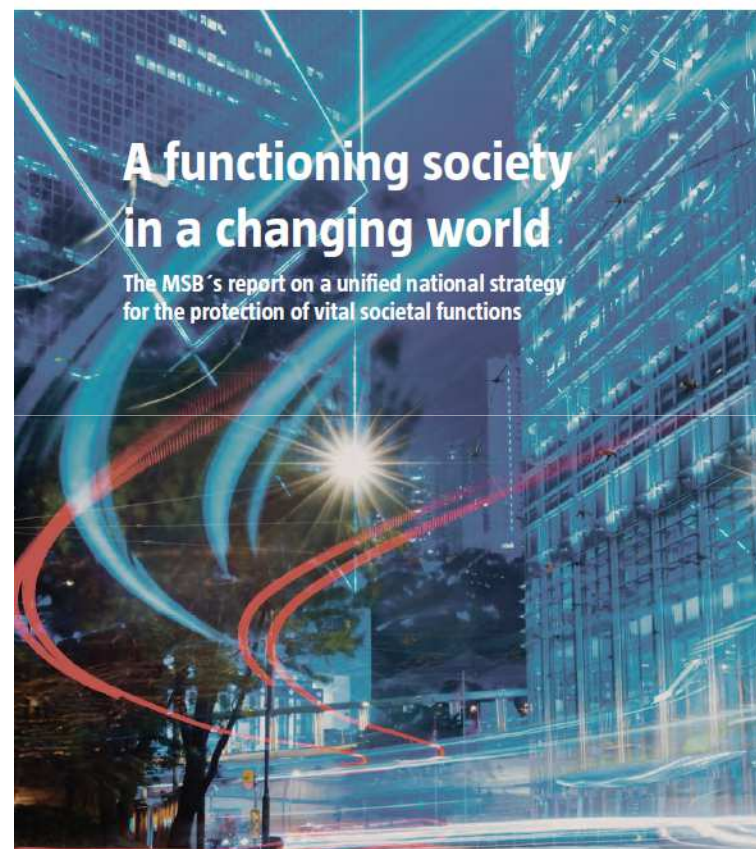
Risk and Vulnerability Analyses



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Myndigheten för
samhällsskydd
och beredskap



National Strategy for protecting vital societal functions



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Integrating risk management into the EIA process

- Revised 2012
- www.msb.se

Denna publikation är en revidering och uppdatering av boken Olycksrisker och MKB som Räddningsverket gav ut 2001. Den största förändringen inom MKB området sedan 2001 är införandet av miljöbedömningar för planer och program, enligt 11-18 §§ miljöbalken, vilket har beaktats i denna uppdatering.

Här ges en beskrivning av MSB:s syn på hur olycksrisker bör hanteras i miljökonsekvensbeskrivningar, men utgör inga allmänna råd.



Myndigheten för
sambandskydd
och beredskap

Olycksrisker och MKB

Att integrera risk- och
säkerhetsfrågor i MKB-processen



December 2012

UNISDR:s Making Cities Resilient- kampanj

Förebilder (6): Karlstad, Kristianstad,
Göteborg, Jönköping, Malmö, Arvika

Deltagande (1): Jokkmokk



Svenska städer har bildat sitt eget
MCR-nätverk.



Kristianstad skyddar ekosystemet, en av
UNISDR:s 10 punkter för resiliens städer.

Utbyten, utmärkelse, utvärdering



Utbyten inom Europa
UK, Österrike, Tjeckien,
Italien, Holland



Utmärkelse
Sasakawapris,
Karlstad och MSB



Borgmästare från Amadora,
Portugal med Peter Kullgren,
Karlstads kommunstyrelse
under Global Platform DRR

By participating in the
campaign the city has an
opportunity to:

1. Profile their disaster risk reduction work
2. Enhance knowledge and exchange experiences
3. Improve Disaster Risk Reduction at the local level



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Lessons Learnt from Australia

- www.msb.se
- Sandy



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OBSERVATÖRSRAPPORT

Hanteringen av de omfattande naturkatastroferna i Queensland 2011





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MSB can support with resources at extra ordinary events

- If regional resources are not sufficient





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Barriers

- 5 km of barriers
- Support staff initially



High capacity pumps

- 3 high capacity pumps, 20 m³/min
- Support staff

