

KEY TOPICS AND RECOMMENDATIONS FROM THE UNECE PUBLICATION

PART B - TECHNICAL GUIDANCE ON LAND-USE PLANNING, THE SITING OF HAZARDOUS ACTIVITIES AND RELATED SAFETY ASPECTS

LAMOT CONVENTION AND HERITAGE CENTRE

16TH – 17TH MAY 2018

MECHELEN – BELGIUM (FLANDERS)

Guidance on land-use planning and the siting of hazardous activities and related safety aspects

...se Planning, the Siting of Hazardous Activities and related Safety
 ...veloped in close cooperation with the constituencies under three
 ...the United Nations Economic Commission for Europe (UNECE) – the
 ...Transboundary Effects of Industrial Accidents (Industrial Accidents
 ...Convention on Environmental Impact Assessment in a Transboundary
 ...Convention) and its Protocol on Strategic Environmental Assessment
 ...A) – with the support of the European Investment Bank, the EU Bank. The
 ...for Housing and Land-Use Management also contributed to the development
 ...A.

...aims to assist Parties in their efforts to reduce the risk of hazardous
 ...idents and the consequences on human health, the environment and cultural
 ...in countries and across borders. The general guidance (Part A) does this by
 ...ples and pointing to good practices of countries' efforts in the UNECE region.
 ...e industrial safety, environmental and environmental assessment and land-
 ...ng processes. It also provides support to Parties in their efforts to resolve
 ...starties between these and other instruments, including the UNECE Convention
 ...o Information, Public Participation in Decision-Making and Access to Justice in
 ...ntal Matters (Aarhus Convention), aiming to assist competent authorities and
 ...rs in applying the provisions of the Convention. The technical guidance
 ...ch focuses on the risk aspects.

...nce of the Parties to the Industrial Accidents Convention in its ninth meeting
 ...9-30 November 2016) took note of the guidance (Parts A and B). The Meetings
 ...to the Espoo Convention and its Protocol on Great Lakes sessions held in
 ...16 June 2017, endorsed the guidance (Parts A and B) and adopted the
 ...nce (Part B). Regarding the need for effective mechanisms to integrate
 ...ossible industrial activities, the guidance also emphasizes the need to
 ...t cultural heritage within countries and across borders, the governing
 ...d countries to promote the implementation of the guidance among
 ...environmental assessment experts and industrial safety specialists.



Part A: guidance on general matters, which provides support and clarification to public authorities and practitioners on the requirements, interlinkages and application of the relevant UNECE instruments

Part B: guidance on technical aspects of land-use planning and the siting of hazardous activities and related safety aspects, which focuses on the risk aspects of hazardous facilities.



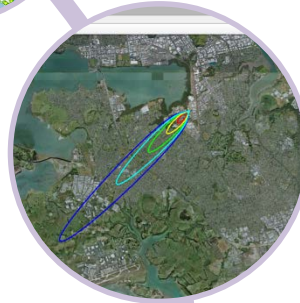
OUTLINE OF THE TECHNICAL GUIDANCE - PART B



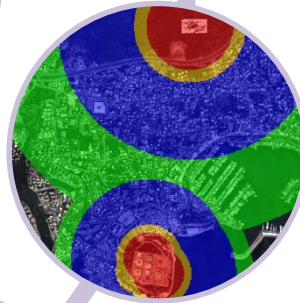
Introduction



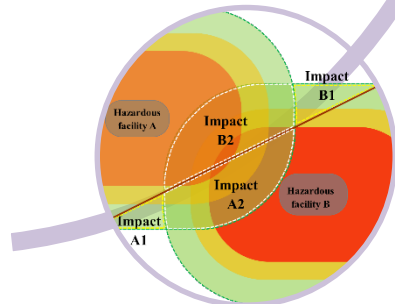
Part B Technical Guidance on Land-Use Planning and the Siting of Hazardous Activities and related Safety Aspects



Technical guidance on planning and risk assessment methods



Examples of planning approaches and technical risk assessments in member States (Flanders Region of Belgium, France, Italy, United Kingdom)



Conclusion



Aspects of siting of hazardous activities, planning the use of land around these activities and improving safety at the hazardous activities are addressed under several UNECE legal instruments:

- (1) Convention on the Transboundary Effects of Industrial Accidents (Industrial Accidents Convention)
- (2) Protocol on Strategic Environmental Assessment (Protocol on SEA)
- (3) Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention)
- (4) Convention on the Protection and Use of the Transboundary Watercourses and International Lakes
- (5) Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention)
- (6) Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters
- (7) *HABITAT III UNECE Committee on Housing and Land-Management*

A plain description of sustainable land-use planning (adapted from the Canadian Institute of Planners):

land-use planning means the scientific, aesthetic, and orderly disposition of land, resources, facilities and services with a view to securing the physical, economic and social efficiency, cultural and heritage resources, health and well-being of present communities and their future generations

Technical and scientific advice to support land use planning decision making (e.g. use of assessment methodology and risk acceptance criteria)

Social, economic and political aspects to be addressed during land use planning decision making (e.g. employment, land value, heritage)

Land-use planning is not the application of an algorithm: it is a consensus building process involving stakeholders (authorities, industry, population)



- ▲ Different technical approaches to land-use planning: all aim to verify that the level of environmental and human risk is appropriate and acceptable for the different land-use zones in the vicinity of the hazardous facility
- ▲ Some countries have developed well-defined practical approaches for risk assessment with respect to land-use planning
- ▲ Some countries have over twenty years experience in land-use planning risk assessment
- ▲ France has over two centuries of experience (started with Napoleon Bonaparte 1807)



Approaches to land-use planning

Deterministic /
consequence based

Consequences

Compatibility
criteria

Semi-quantitative
based

Reference
frequencies +
consequences

Compatibility
criteria

Risk based

Individual +
societal risk

Compatibility
criteria

Country specific land-use planning



TECHNICAL APPROACHES IN LAND USE PLANNING (3)

Deterministic

- ▲ zoning criteria based on generic distances defined between areas occupied by hazardous activities and other community purposes

Consequence based

- ▲ zoning criteria based on damage thresholds values (typically "lethal" and "irreversible" effects thresholds)

Semi-quantitative based

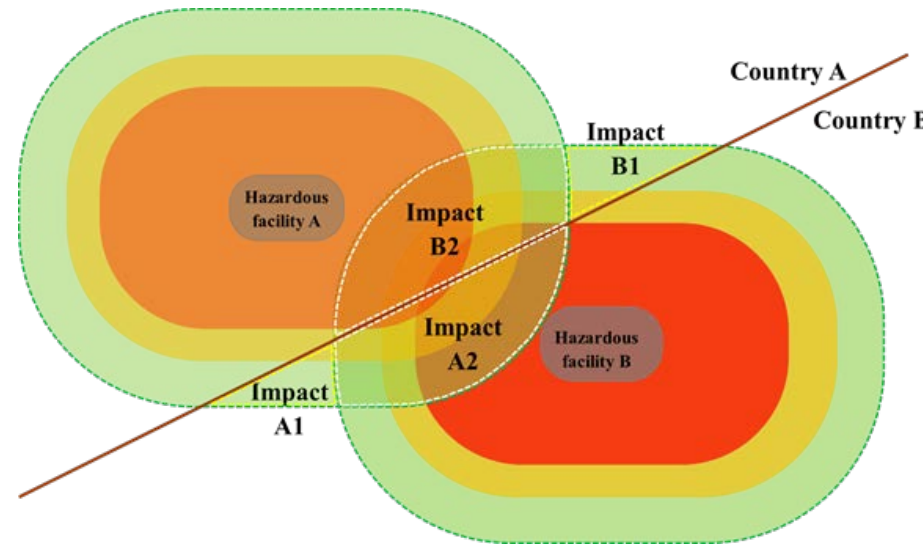
- ▲ zoning criteria is based on vulnerability thresholds values identifying lethal and irreversible effects.

Risk based

- ▲ zoning criteria is based upon specific individual risk or/and societal tolerability criteria

- ▲ different risk analysis methods and different models
- ▲ different data
- ▲ different land use compatibility approach and/or criteria

- ▲ agree on common models and data for risk analysis and land use compatibility criteria;
- ▲ establish procedures for exchange information on existing situation (chemical, chemical process, land-use, sensitive objects, intended future plans)
- ▲ establish procedures for involving the local population on both sides of the border

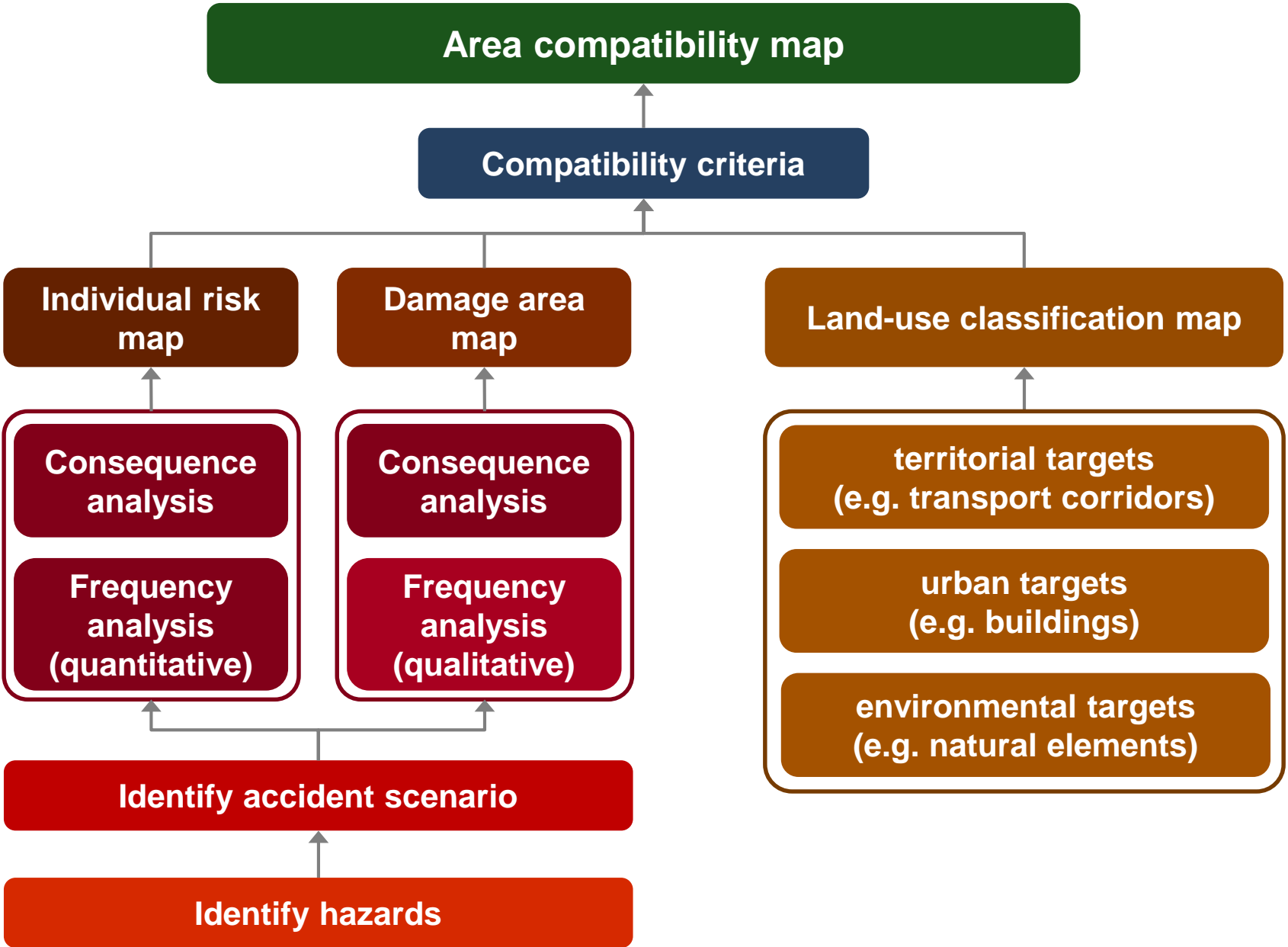


- ▶ Paramount ensuring that hazardous industrial facilities are not constructed in areas prone to natural disasters and other risks, which are likely to be exacerbated by the expected increase of extreme weather events due to climate change.
- ▶ Land use planning decisions (on both existing and proposed new facilities) must account for all sources of risk, both natural and human made
- ▶ Examples of important natural disasters risk sources to consider in land-use and risk mapping are flooding, earthquakes and domino effects



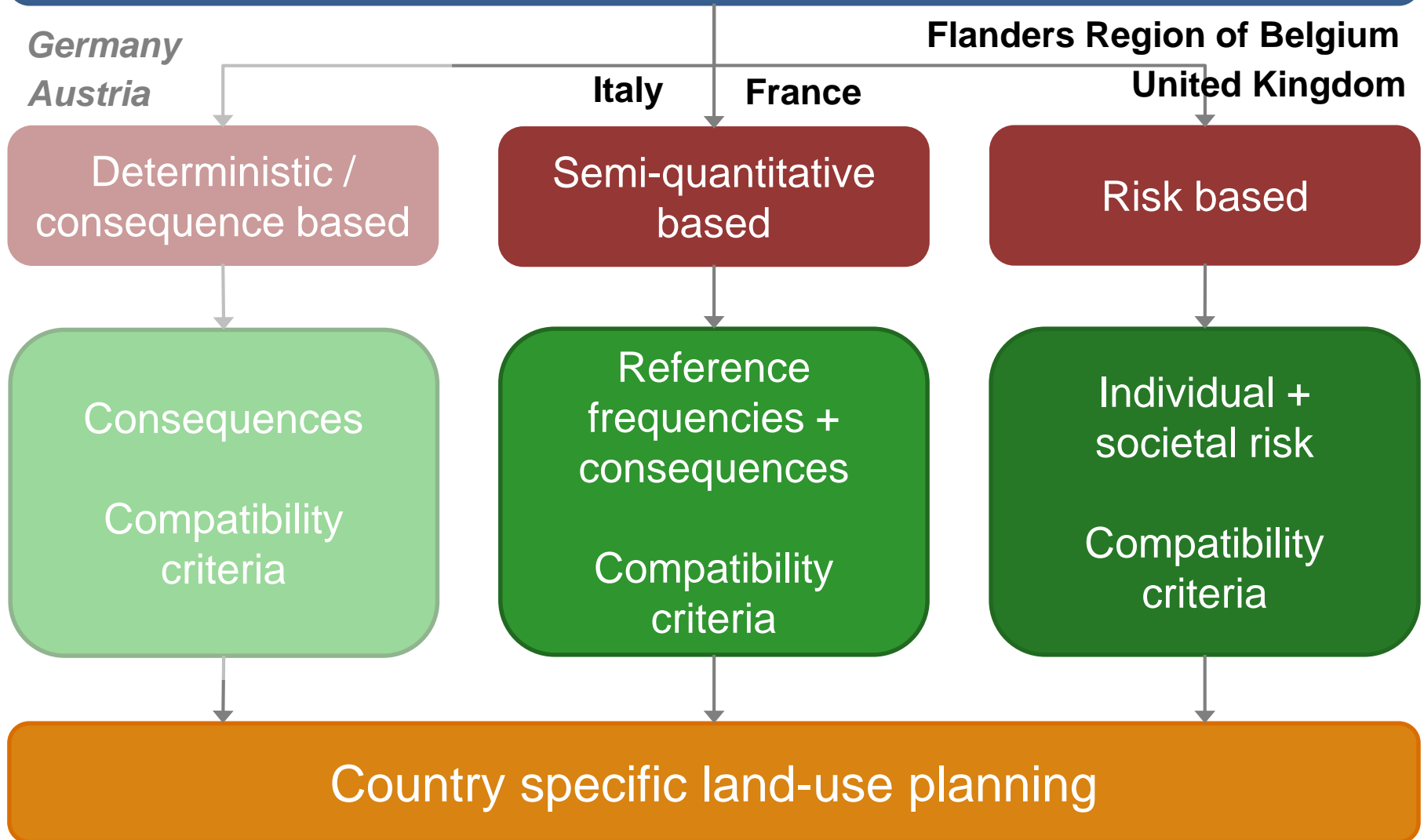


OBTAINING AN AREA COMPATIBILITY MAP





Approaches to land-use planning





- ▲ Land and its resources are limited hence the necessity to make an optimal and wise use of them through a land-use planning process
- ▲ Land for different socioeconomic activities, including hazardous activities, is allocated and regulated whilst maintaining/creating a safe and sustainable environments
- ▲ Requires establishing procedures for identifying, assessing and managing safety aspects and all sources of risk (including transboundary risks and effects) of hazardous facilities to human health and the environment
- ▲ Includes considering natural disasters and other risks, which are likely to be exacerbated by the expected increase of extreme weather events due to climate change
- ▲ The potential effects of a proposal on human health, environment and property evaluated based on the evaluation of the risk assessment and mapping against the compatibility and risk acceptability criteria
- ▲ There is no 'better than others' best practice in land-use planning risk assessment methodology

THANK YOU FOR YOUR ATTENTION



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