Sustainable management for the Tisza Basin: Lessons from INSPIRE and GINIE

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Outline

- Broader policy framework
- What are Spatial Data Infrastructures
- Why do we need them
- INSPIRE
- GINIE: Lessons learned
- Implications for the Tisza Project

Significant policy trends

- From sectoral to a more integrated approach
  - Increased complexity
  - Environmental awareness
  - Attention to cumulative policy interaction (agriculture, transport, spatial development, environment)
- Increased need for coordination
  - Natural disasters (e.g. flooding)
  - Transport and trans-border issues
- Fear of detachment from citizens
  - More consensus based policy formulation
  - More transparency and access to information

Natural Hazards in EU
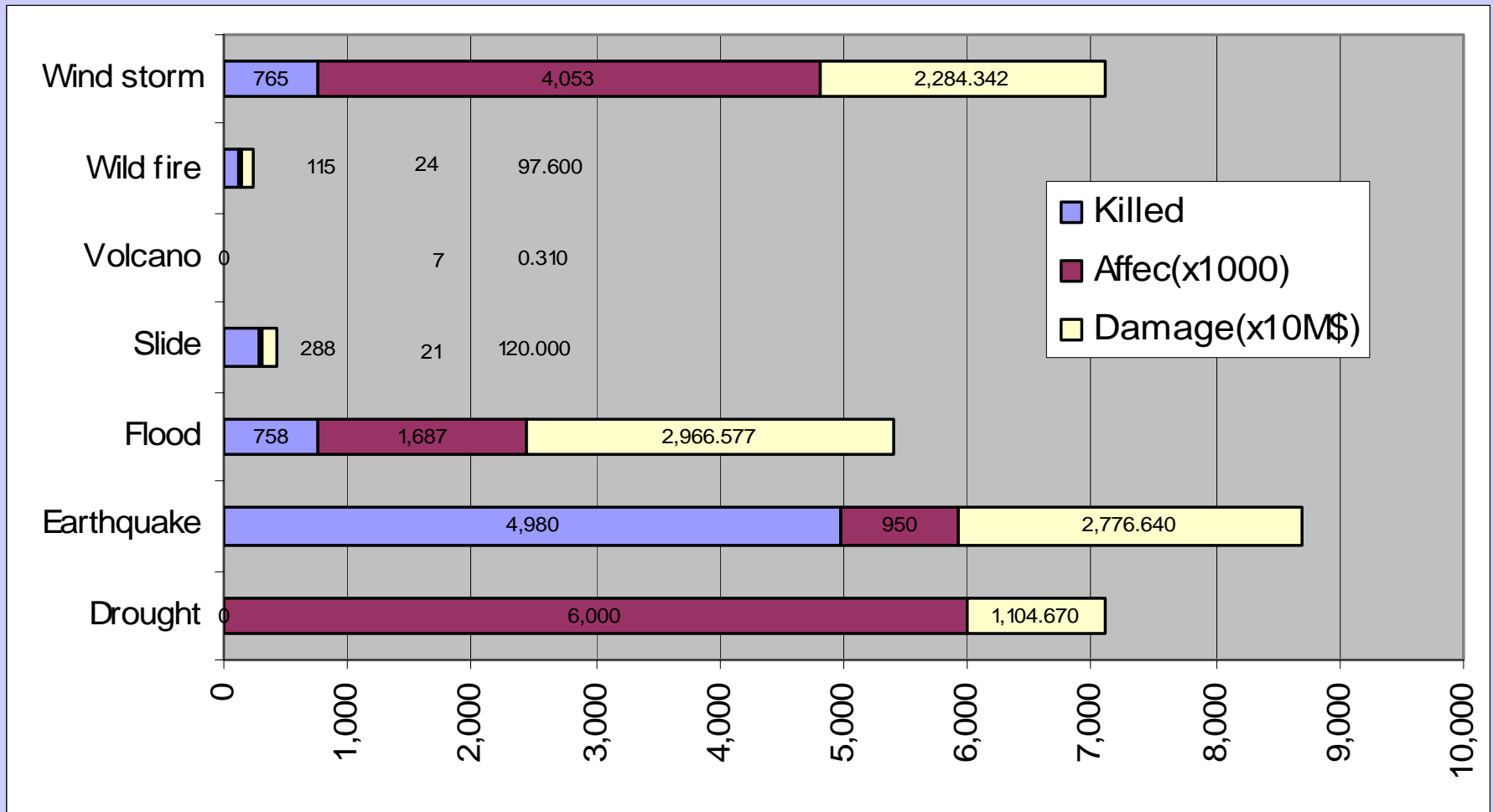
$ 80-100 bn over 20 years, 5000 killed, 12m people affected

Source: The OFDA/CRED International Disaster Database

Implications of new approach

- Emergence of spatial planning at regional scale (e.g. European Spatial Development Perspective)
  - Analysis
  - Coordination of intervention
  - Evaluation of impacts
- Increasing recognition of the importance of local issues and stakeholders
  - Need assessment, targetting intervention, monitoring, and evaluating

Direct consequences on GI

Current deficiencies on data availability are requiring actions that can be characterized in 3 headings

- Where EU-wide data for a given administrative level is not available, such as urban level data at NUTS5, to support new policy concerns such as urban policy, although the data might exist locally

- Where new policies span geographically across different administrative units and require new data collection efforts, for example in the case of the new **river basin districts**

- Where the unit of analysis requires new data and methods for its characterization, such as the increasing use of landscape as a geographical entity.

Impacts on GIS requirements

- Increasing need of tools for spatial analysis
- Indicators
  - Environmental pressure, landscape diversity, strategic impact assessment,..
- Integration of GI and statistics
  - Population density, structural funds
- Modeling
  - Carbon sink, air quality, water quality and quantity,

Key recognition

- The need for better and more disaggregated information requires a shift from a centralised to a decentralised approach

- Most of the information needed exists but is held **locally**

- Need for better **access** to local information

- Need for improved **methodologies** for data integration and analysis

# Hence the importance of Spatial Data Infrastructures

- Policy

- Reference data

- Thematic data e.g. transport, environment, etc.

- Metadata and catalogues

- Coordination

So what is the EC doing

- Increasing specific requirements for GIS
  - E.g. Water Directive, agricultural policy, 6th Environmental programme (COM2001 31). IACS, etc.
- New Legislation
  - Revised Directive on Access to Environmental Information (2003)
  - Launch of process to develop Directive on Infrastructure Spatial Information in Europe (INSPIRE)
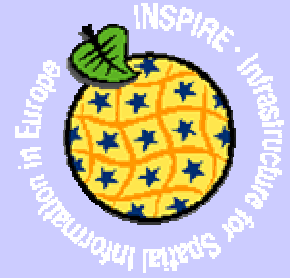
What is the purpose of a European SDI?

- To ensure implementation throughout Europe of the measures needed to address the obstacles to the use of spatial information across borders

- To free the potential of the use of existing information currently locked up by the GI obstacles

- To deliver the capacity to integrate information from different sources

- To provide a framework in which information collected at the local and regional level can be used in a national and european context and vice versa

INSPIRE Principles

- Data should be collected once and maintained at the level where this can be done most effectively
- Combine seamlessly spatial data from different sources across the EU and share it between many users and applications
- Spatial data should be collected at one level of government and shared between all levels of government
- Spatial data needed for good governance should be available on conditions that are not restricting its extensive use
- It should be easy to discover which spatial data is available, to evaluate its fitness for purpose and to know which conditions apply for its use

INSPIRE Key Measures

Measure 1: Document existing spatial data

Measure 2: Contribute to data standards and harmonise existing data

Measure 3: Establish service network to publish, discover, evaluate, view and access spatial according to common standards

Measure 4: Establish licensing framework to share information between public bodies

INSPIRE Impact Assessment

- Infrastructures like INSPIRE need upfront investments

- Benefits many more times than costs

- Most costs (and benefits) at the local level to build organisational capacity and technical skills

- Legislation needed to ensure cohesiveness of approach and infrastructure i.e. voluntary efforts and best practice alone are not enough!

INSPIRE:
a worthwhile investment!

Investments needed to setup and run INSPIRE (left) and benefits in €m per annum (right)

	EU	National	Regional/local
Harmonisation	2.7	1.8	1
Metadata	0.6	3.5-4	68-70
Data Policy Framework		0.5	
Coordination and implementation	3.6	20	100-170

Total investment per year (10 years):
Per MS: 8-12 m€
Per region: 120 000 - 175 000 €
Per citizen: 0.4 – 0.6 €

Type of benefit	Quant. estimates
More efficient EIAs and SEAs	100-200
More efficient environmental monitoring	100
More cost-effective expenditure on environmental protection	300
More cost-effective implementation of the environmental *acquis*	50
More effective implementation of EC projects	5-15
More effective expenditure on TENs	140
Reducing duplication of Data collection	25-250
Improved delivery of risk prevention policies	120-400
Improved delivery of health and env. policies	350
Total	**1190-1800**

GINIE: Geographic Information Network in Europe

- IST Project 2001-03
- Aim: to develop a cohesive Geographic Information Strategy at the European level
- Partners: EUROGI, OGCE, JRC, Univ. Sheffield

- **www.ec-gis.org/ginie**

Lessons Learnt

– Most countries and many regions are developing their SDIs to support good governance, economic development, and increased access to information

– SDIs are not just about having a lot of data. They are about <u>developing a strategic infrastructure</u> to underpin the development of the Information Society and the Knowledge Economy.

– Best examples closely link SDIs to e-gov strategies, modernization of public administration, and promotion of economic development through close involvement of private sector.

Lessons Learnt

– Like any other form of infrastructure (e.g. transport), for an SDI to work effectively it is necessary that:

- It works effectively at <u>all levels</u>: local, regional, national, European, global;

- It is <u>well connected</u> with other related infrastructures such as those of e-government, and public administration in general, research, and the private sector;

- It is regularly <u>maintained;</u>

- There are clear lines of <u>responsibility</u> for its development, operation, maintenance, and regulation.

Coordination is most crucial element of SDI

- Strategic coordination (liaison, policy watch, capacity building, impact analysis)
- Operational Coordination (technical specs, implementation, tech support, geo-portals)
- Coordination need not be expensive but it must be **somebody's job** to ensure that activities take place and move in the same direction, building on each other
- Without it risk of wasting time and money.

So what lessons for the Tisza Basin?

- Perfect example of trans-national environmental and socio-economic project

- Fully in line with European developments that recognize the trans-border nature of environmental issues, and the need to focus at the area level appropriate to the problem e.g. river basin

- In line with recent European legislation e.g. Seveso Directive, Water Framework, and programmes like INTERREG.

So what lessons for the Tisza Basin?

- Need to secure benefits at an early stage
- Link to e-gov and economic strategy to develop companies and jobs in the private sector (PPI)
- Facilitate dissemination and use of Geographic information to private companies in an open and transparent market to provide services to government, business and citizens
- Coordinating local and regional authorities across five countries will take time.
- Opportunity to start from clear focus on river basin environmental management to build human, technical, and organizational capacity and move towards a comprehensive spatial strategy for the Basin.