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Knowledge FOR Resilient soCiEtY

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INTEGRATED SPATIAL PLANNING IN FUNCTION OF
FLOOD MANAGEMENT IMPLEMENTATION IN BALCAN REGION

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Flood management

GWP, WMO, 2009

Flood management is recognized as the highest model of comprehensive, sustainable, resilient and responsible human answer to the challenges of floods in condition of climate change. It involves:

- Spatial measures
 - Technical measures
 - Organization measures
- } Spatial planning



Hypothesis





- There is interaction between spatial planning (regional and city planning) and flood management:
- Spatial planning is the mechanism for implementation of flood management;
- Flood management plans are part of data base in process of spatial planning;
- Integrated approaches are necessary for resilient spatial planning;

Integrated Flood management

GWP, WMO, 2016



IFM require planning process which should involve all organizations, institutions or communities that could affect or be affected by the hydrological processes of the river basin. Also, they are developed at different administrative levels as part of sectoral planning. These include:

-  Basin or Catchment Flood Strategy
 -  Basin or Catchment Flood Management
 -  Local Flood Management Plan
 -  Project Plan
- } wider areas and time horizons up to several decades
- } small spatial scales and timescales of months or a few years

System of spatial planning and design in B&H

Division of the activities

Hierarchy of plans

Spatial planning (state, region/district, municipality)

- spatial plan of republic
- spatial plan of region
- spatial plan of specific area
- spatial plan of municipality



Urban planning (town, settlement, urban block, street plot)

- urban plan
- zoning
- regulatory plan
- urban project (**urban design**)



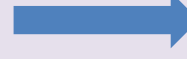
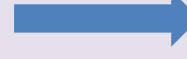
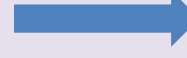
Architectural design (buildings)

- architectural study
- architectural project

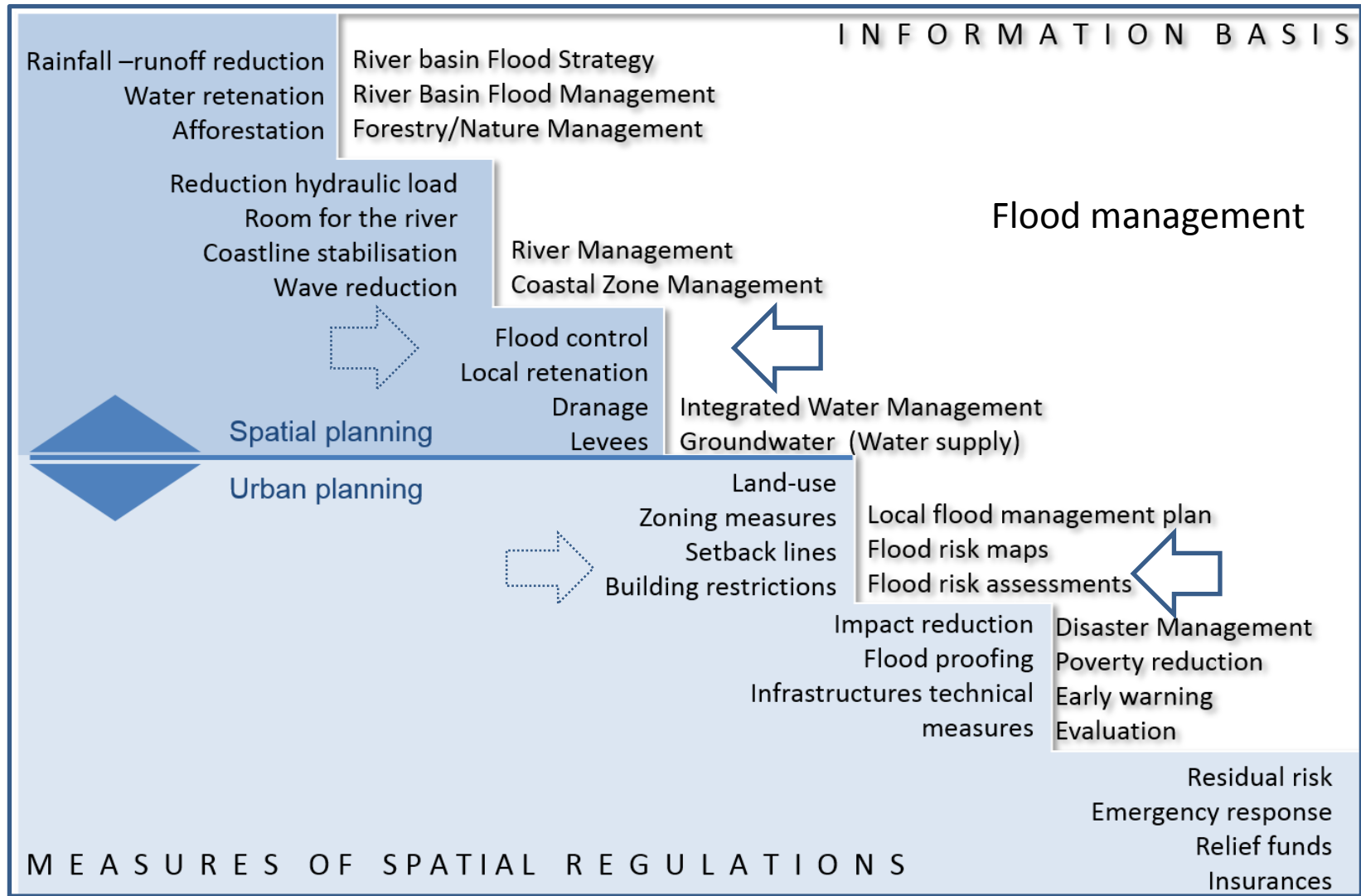


Civil engineering design

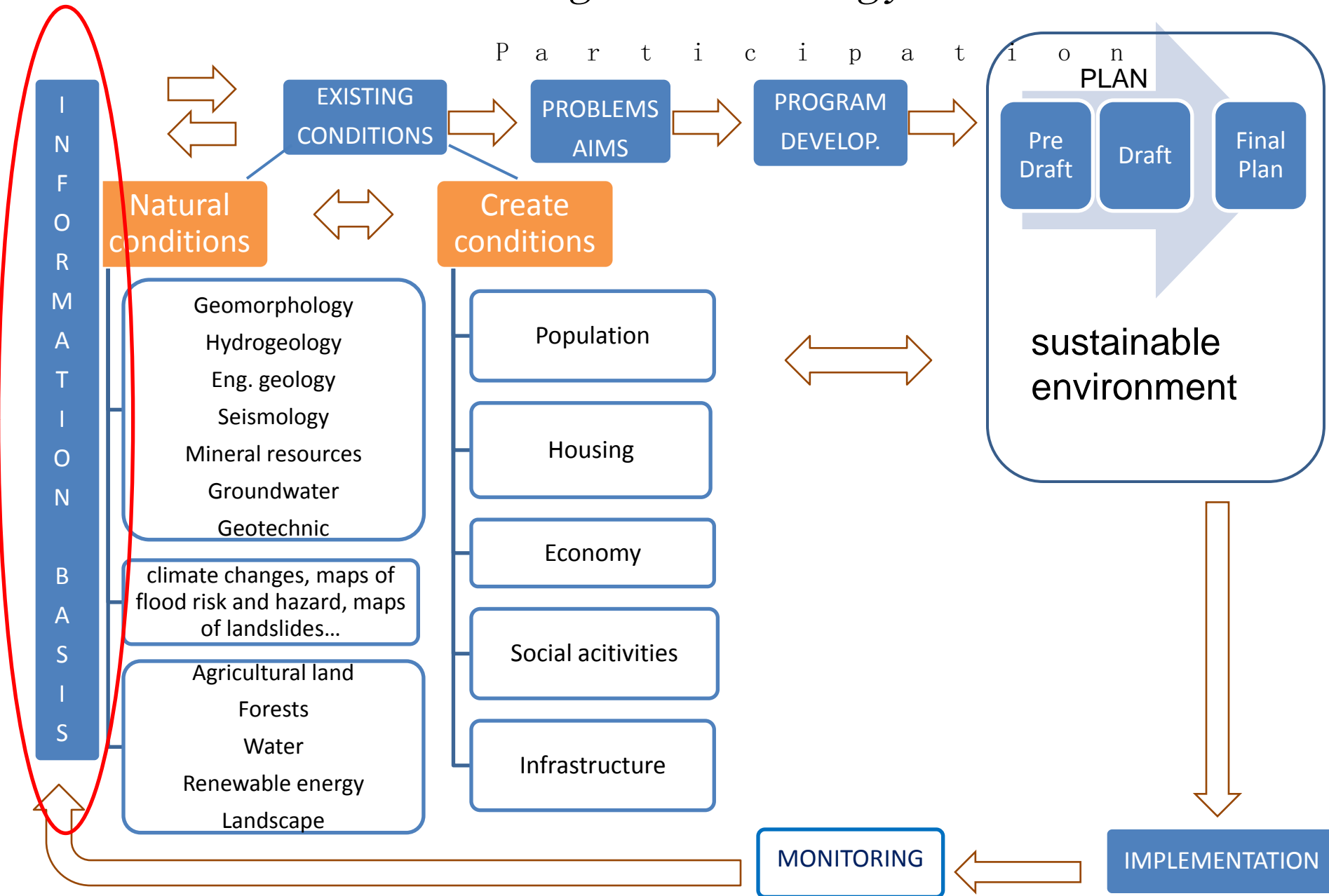
- Civil engineering structures projects



Flood risk management cascade (EU recommendation) and measures of spatial regulations in system of planning.



Planning methodology





EU flood Directive

(2007/60/EC)

„Reduce and manage the risk that floods pose to human health, the environment, cultural heritage and economic activity in EU countries“.

LAND USE PLANNING BECOMING MORE IMPORTANT

The requirements for member states were:

- to carry out a preliminary assessment to identify areas at risk of flooding (2011),
- to draw up flood risk and hazard maps (2013)
- to establish flood risk management plans that focus on prevention, protection and preparedness (2015).

Flood Hazard and Flooding Scenarios for Danube Basin



Integral water management of the Danube basin

(Convention on Cooperation for Protection and Sustainable Use on the Danube River, signed in 1994, enforced in 1998)

ICPDR, Wiena, December 2014.

Source: www.ingkomora.org.rs/...2015/20151216_6708_odbrana_od_poplava.pdf



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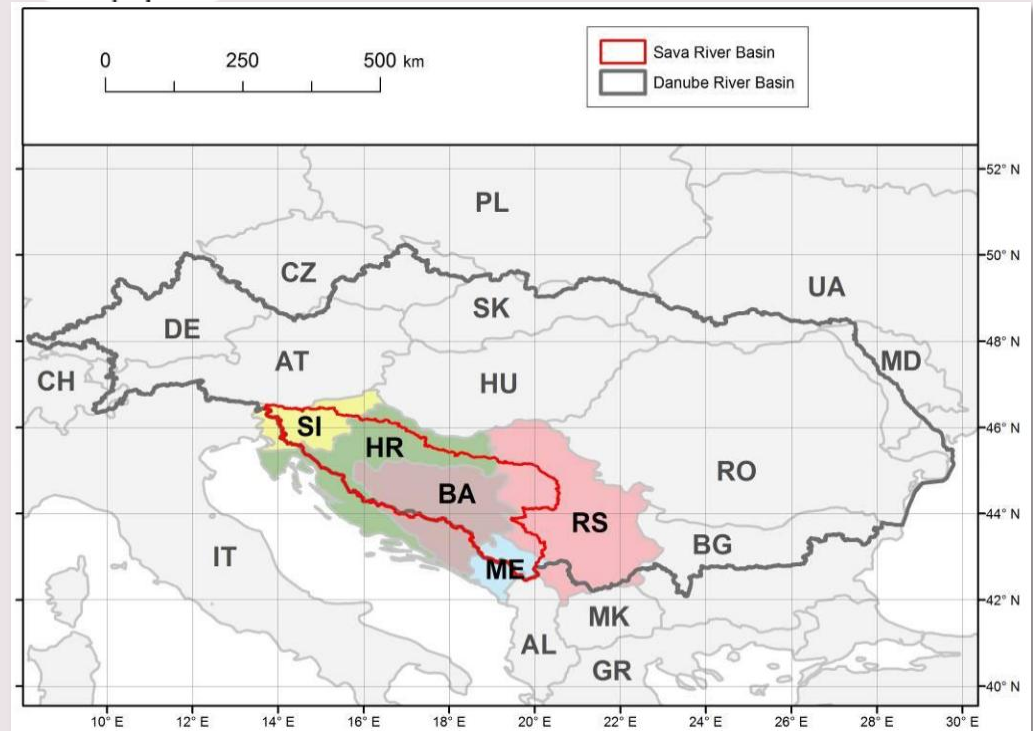
Practice in Balkan countries



Integral water resources management of the Sava river basin

Serbia, Bosnia & Herzegovina Slovenia and Croatia) ratified the Contract on the international basin of the Sava River in 2002

Joint management of flood risk Romania-Serbia (Governments of Romania and Serbia and Structural Funds of EU 2007-2013)



Insert of 'The Management plan for the Sava river basin' -Draft plan dating 2011, adopted December 2014.

Practice in Balkan countries



Action plan for flood protection and river management in B&H 2014–2017

Lack of:

- flood management plans on the local level

- maps of flood risk and hazard

- integrated spatial planning



Regulation of river Bosna
http://voda.ba/uimages/20122016_news_13.jpg



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Integrated planning

- Interaction of all planning steps
- Multidisciplinary and integrated analysis of all relevant aspects of space
- Professional capacity
- Planning flexibility and adaptability
- Connection of spatial levels
- Institutional and financial support



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Integrated planning

- Participation
- Effective and transparent planning procedures
- Creation of updated spatial database (cadaster, natural resources, flood management plans with maps of risk and hazard of floods, seismological maps, renewable energy resources, maps of landslides...)
- Regulatory framework
- Education and skills



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Guidelines to improving planning methodology in Balkan countries (integrated approach)

- Interaction of all planning steps
- Multidisciplinary and integrated analysis of all relevant aspects of space
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Conclusions

- Spatial planning is the mechanism for implementation of flood management.
- There is interaction between flood management and spatial planning:
 - FM is necessary part of information basis for sustainable and resilience SP.
 - SP is the instrument for all kind of structural intervention in space, including measures of flood protection.



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Conclusions

- There is lack of flood management plans, as well as lack of spatial plans that deal with this topic integrally at the strategic and local level in Balkan region.
- Active inclusion of spatial planning into the issue of flood protection in Balkan countries requires improvement of spatial planning methodology in aim of more integrated approach.



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Conclusions

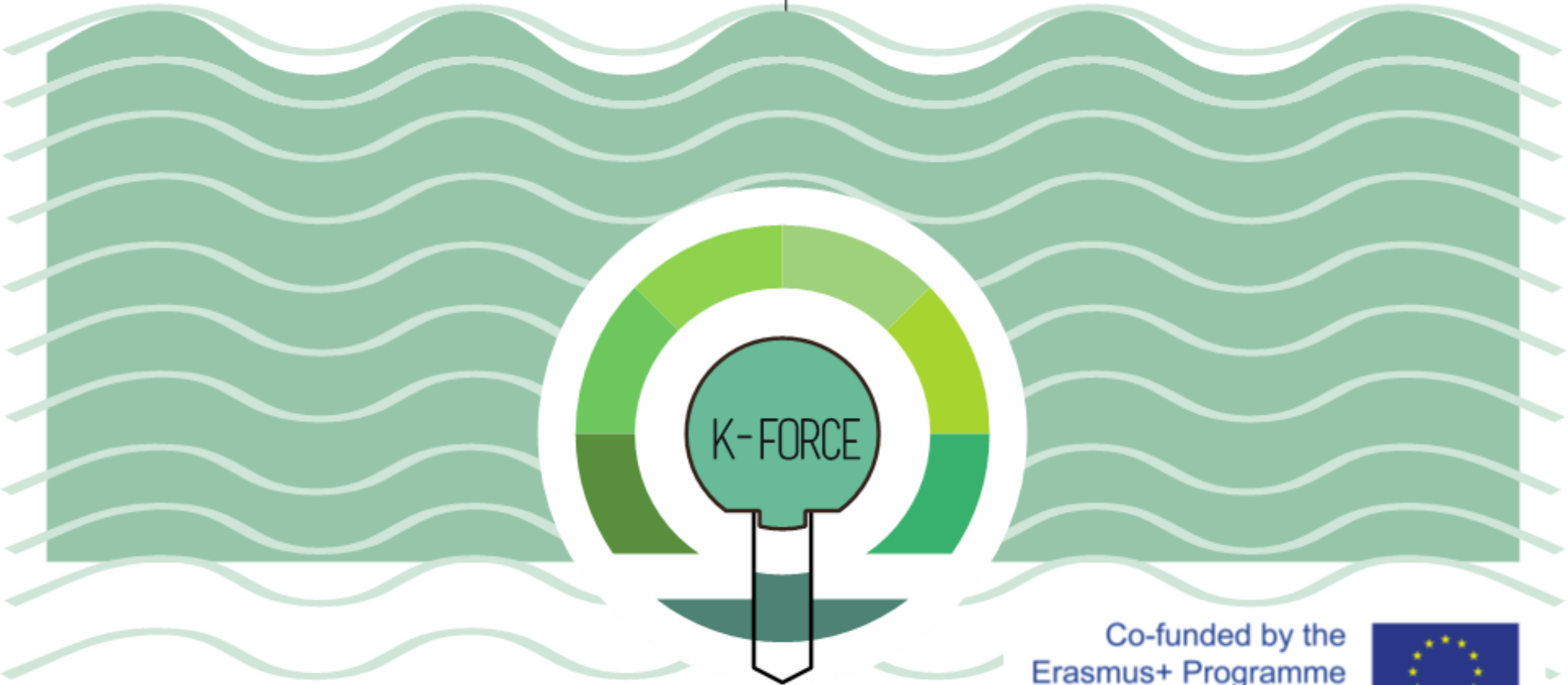
Proactive and responsible role of states and municipalities, professional and academy institutions, and civil sector in Balkan countries is necessary in aim to improve flood management including practice of integrated spatial planning and

Knowledge For Resilient society



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