

# STAR-FLOOD

[www.starflood.eu](http://www.starflood.eu)

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With special thanks to Marleen van Rijswick

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## STAR-FLOOD project

- Search for **appropriate** and **resilient** Flood Risk Governance Arrangements (FRGAs) for dealing with flood risks in vulnerable urban regions;
- In the context of broader debates on the need to **diversify Flood Risk Management Strategies** (urbanisation/climate change);
- and prominent **policy initiatives** (e.g. EU Floods Directive)

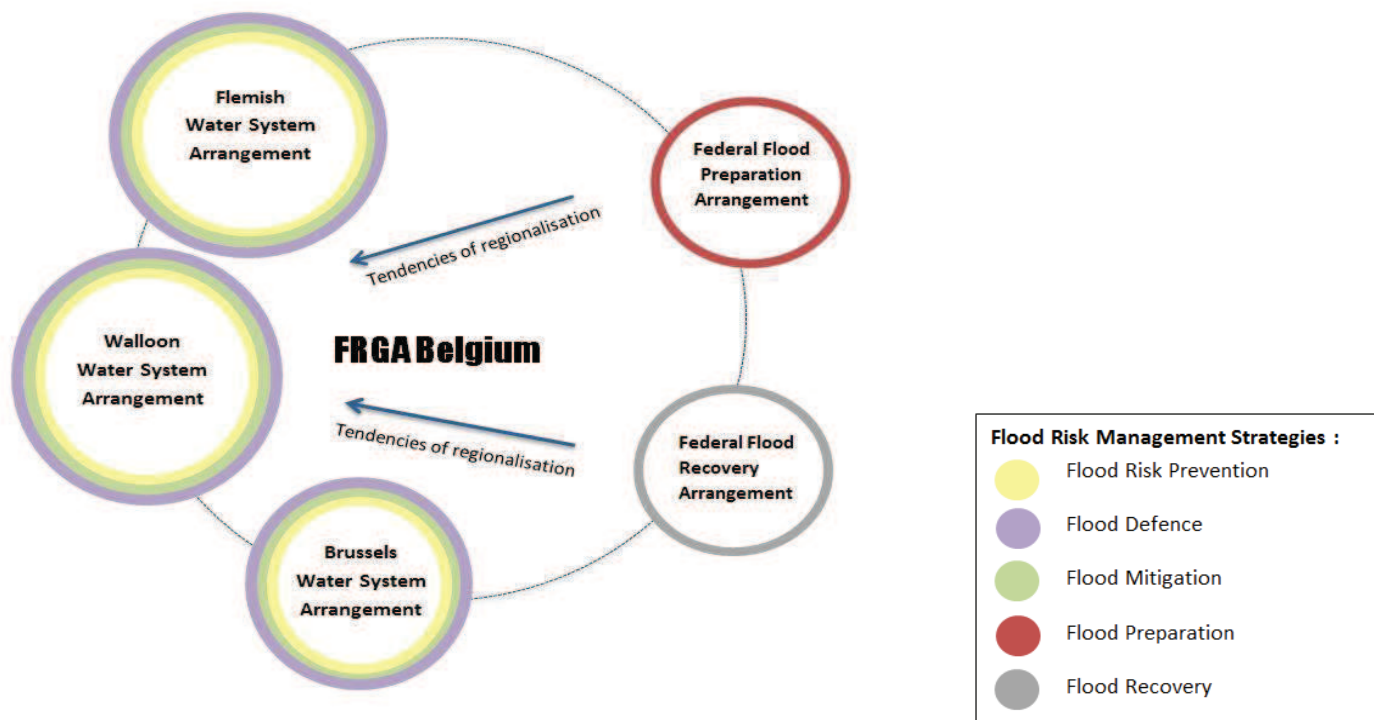


Figure 1: Location of selected case studies (18 in total)

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# Belgium: Flood Risk Governance Arrangement: Fragmented (regions and policy fields), strong bridging mechanisms and communication



## STAR-FLOOD project

- Integrating **public administration** and **legal expertise** through the PAA
- **6 countries**: different background conditions for flood risk governance
  - Belgium
  - The Netherlands
  - France
  - England
  - Poland
  - Sweden
- Per country: national study & 3 case studies



Figure 2: STAR-FLOOD partners

# Facts and figures of the 6 STARFLOOD countries



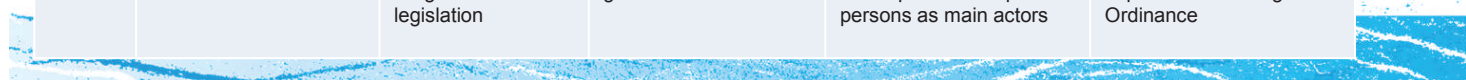
	Types of flooding possible	Actual flood events	Some measure for the country's vulnerability (climate change projections, geographical factors including urbanisation)
NL	Fluvial, pluvial, tidal, storm surge	1953, 1993/1995, 1998, (2003), 2013, 2014 (pluvial flooding)	59 % of land is flood prone; most assets & inhabitants in flood prone area (low flood awareness)
F	Fluvial, pluvial, tidal	1999, 2010 60 % of natural disasters and of damages	Low flood awareness
PL	Fluvial, pluvial	1997, 2010	
En	Fluvial, pluvial, tidal, storm surge	1947, 1953, 1998, 2000, 2007, 2013/14	
BE	Fluvial, pluvial, tidal, storm surge	1953, 1976, 1993, 1995, 1998, 2002/2003, 2010	Flanders: 7,5% of land is flood prone & in total more than 220.000 people potentially affected by flooding Flanders: land sealing very high
SV	Fluvial, pluvial, dam break	-	



## Similarities & differences in the legal and administrative context



	Administrative	Legal system	Fragmentation Or Multiple Flood Risk Management Strategies?	public/private divide	Implementation and impact floods directive
NL	Decentralized unitary state	Civil law Fragmented legislation	Yes, but focus stays on defence	Mostly public, shift towards more private responsibility No insurance	Low: no real changes except for risk approach
F	Centralisation, shift to decentralisation	Civil law	Fragmented flood risk governance	Mostly public, Mandatory insurance	
PL	Centralisation	Civil law, Communist legacy (vested economic interests, behavioral routines, claimed responsibilities of the state etc.)	Flood prevention strategy Shift from defence to preparation strategy Flood risk management rather than vulnerability management	Mostly public	High: opportunity
Eng	Decentralisation, shift to centralisation	Common law	Highly fragmented flood risk governance	Private & public Voluntary insurance	High: risk maps
BE	Federal state	Civil law	Fragmented flood risk governance	Mostly public Mandatory insurance	Moderate: pre-existing FRM measures but clearer procedural framework and incentives
SV	decentralisation	Civil law Fragmented legislation	Fragmented flood risk governance	Mostly public, Municipalities and private persons as main actors	Low: Floods Directive implemented through Ordinance



# Five flood risk strategies

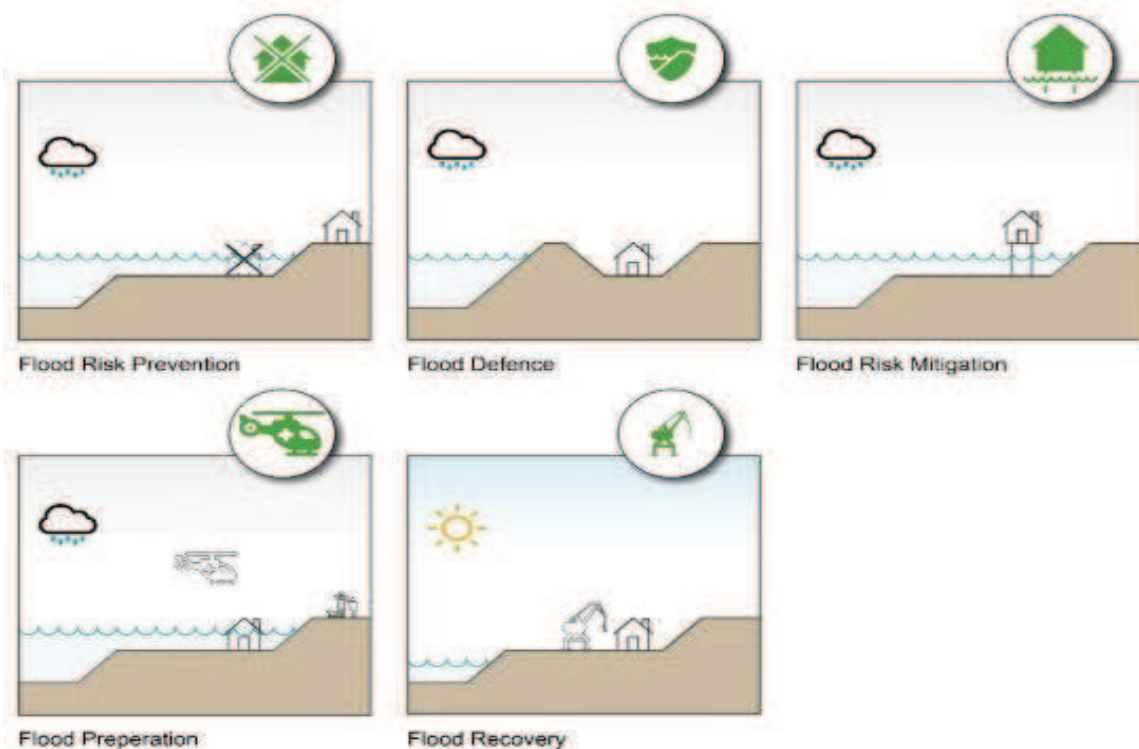


Figure 4: Flood risk strategies (Practitioner's Guidebook)

# Different instruments and measures in Flood Risk Management Strategies

Flood Risk Management Strategies				
Prevention	Defence	Mitigation	Preparation & response	Recovery
<ul style="list-style-type: none"> <li>• Spatial planning</li> <li>• Re-allotment policy</li> <li>• Expropriation policy</li> <li>• Water test</li> </ul>	<ul style="list-style-type: none"> <li>• Dikes</li> <li>• Dredging</li> <li>• Widening or deepening water course</li> <li>• Storm surge barrier</li> <li>• Diversion channels</li> </ul>	<ul style="list-style-type: none"> <li>• Flood-resilient property design</li> <li>• Green infrastructure (e.g. green roofs, living walls)</li> <li>• Retention and detention basins</li> <li>• Flood control areas</li> </ul>	<ul style="list-style-type: none"> <li>• Forecasting</li> <li>• Warning</li> <li>• Emergency planning</li> <li>• Community awareness-raising activities</li> <li>• Risk communication</li> </ul>	<ul style="list-style-type: none"> <li>• Insurance</li> <li>• Disaster Fund</li> <li>• Repair and rebuilding operations</li> </ul>

Figure 5: Flood risk management strategies and their instruments

# Starting assumptions & Evaluation criteria: resilience and appropriateness



- **Resilience**

“Urban agglomerations, urban areas and regions vulnerable to flooding will be more resilient, if multiple Flood Risk Management Strategies (FRMSs) are implemented simultaneously and are aligned”

- **Appropriateness**

“A successful implementation of resilient FRM requires that the strategies and their coordination are properly institutionally embedded given the opportunities and constraints of their physical and social context”



## Comparing strategies



- **All countries have more or less all strategies in their flood risk policies, but their importance and way of implementation and the use of legal instruments differ.**
  - **Limited in terms of actual application** of a diversified set of strategies
  - More pronounced in terms of **shifts in discourses;**
  - **Focus of discursive shift** differs per country

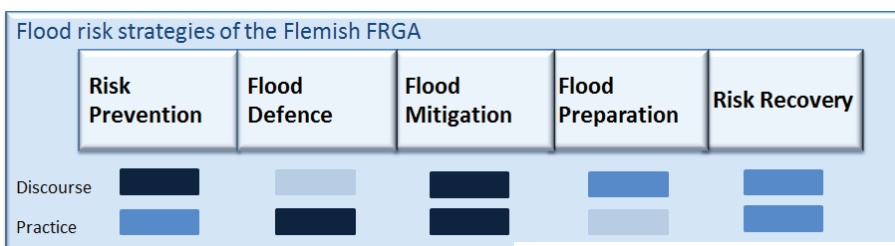
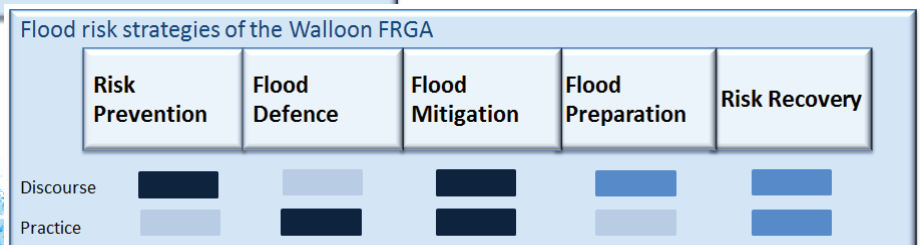


Figure 6: Flood risk strategies in the Flemish and Walloon FRGA



# Five flood risk strategies



Figure 3: Flood risk strategies



## Coherence between strategies and arrangements can be improved by **bridging mechanisms**

Types	Concrete examples	Builds bridges between?
Programmes	Delta Programme (NL)	Different governmental actors?
Instruments	Water test (NL/BE)	Water management/spatial planning
Plans	PAPI (F) (local action plans); Flood Risk Management Plans	Sub-FRGAs?
Formal arrangements	Duty to cooperate in spatial planning and emergency management (EN)	Builds bridges within sub-FRGAs
Maps	Joint construction of/debates about Flood hazard/flood risk maps (all countries?)	Water management, planning, emergency management
Boundary concepts	Resilience (UK, European level)	Varies
Sub-FRGAs that cross multiple strategies	Water system management (e.g. BE/NL/)	Prevention, mitigation, defence
Different fora	International river commission; Regional coordination committees (BE)	Countries, strategies, actors...
Local cooperation	Poland/Sweden	actors, strategies

# Evaluation

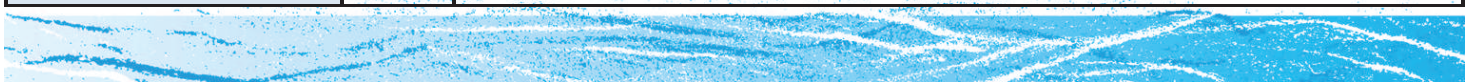
- **Important questions**

- How fragmented legislation is
- What the role of legislation is within the constitutional / administrative context
- How flexible and /or adaptive legislation is
- How many public and private actors are involved and how they can cooperate within the legal system
- If and how bridging mechanisms are necessary and/or designed
- How burden and profit sharing is taking care of
- What the position of interested parties is regarding access to information, participation and access to justice
- ....
- 



## Evaluation: e.g. Belgium

Evaluation criteria	Feature of governance	
Societal Resilience	+	<ul style="list-style-type: none"> <li>▪ Broadening of FRM strategies at all levels + rise of bridging mechanisms (CIW, GTI, PARISs);</li> <li>▪ Increased focus on nexus spatial planning-water management;</li> <li>▪ Innovative spatial planning instruments (land swap, ...) in Flemish Region.</li> </ul>
	-	<ul style="list-style-type: none"> <li>▪ Lack of community resilience;</li> <li>▪ Lacking enforcement of FRM instruments at all levels;</li> <li>▪ Historical backlog spatial planning framework (especially in the Flemish Region);</li> <li>▪ Implementation gap.</li> </ul>
Efficiency	+	<ul style="list-style-type: none"> <li>▪ Transfer of ex-post compensation from public to private funding;</li> <li>▪ Use of CBA in Flanders.</li> </ul>
	-	<ul style="list-style-type: none"> <li>▪ Fragmentation (but improvements in investigated timespan).</li> </ul>
Legitimacy	+	<ul style="list-style-type: none"> <li>▪ Acceptability generally high;</li> <li>▪ Information requirements in real estate increase awareness (in Flemish Region);</li> <li>▪ Increasing involvement stakeholders through river contracts (in Walloon Region);</li> <li>▪ Solidarity in insurance system for floods.</li> </ul>
	-	<ul style="list-style-type: none"> <li>▪ Focus on output legitimacy, lack of input legitimacy.</li> </ul>



# Rules: lessons learned

- Enable **local solutions**
- Enable **mainstreaming** of flood risk policies in other **policy domains**
- Include relevant decision making frameworks, protection goals, coordination mechanisms, enforceable instruments, recovery mechanisms in the EU legal framework
- Take care of **distributional effects**
- Enable **mixes of policy instruments**

## Rules:

Do not only focus on politics and money.  
Don't forget the EU citizens in countries that fail  
to implement successful flood risk policies.  
Provide them with enforceable EU based flood  
risk policy instruments in their national legal  
system

# Resources, actors & discourses: lessons learned

- **Resources**
  - Enable flexible funding
  - Stimulate learning (research / practice)
- **Actors**
  - Stimulate cooperation and awareness
- **Discourses**
  - Do not only focus on climate change
  - Explicit political/societal debate on Flood Risk Management issues
  - Focus on opportunities
  - Do not only focus on economic approaches and instruments



## Results of the project ([www.starflood.eu](http://www.starflood.eu))



### - Several reports

- Country reports: national and case study analysis
  - E.g. Belgium: *“Analysing and evaluating flood risk governance in Belgium. Dealing with flood risks in an urbanised and institutionally complex country”*
- Reports on methodology, on comparison, ...
  - E.g. Report *“Design principles for resilient, efficient and legitimate flood risk governance – Lessons from cross-country comparisons”*
  - E.g. Report *“Researching Flood Risk Governance in Europe: background theories”*
  - E.g. Report *“Flood Risk Management in Europe: European flood regulation”*
- Final Report with key findings: final document with main research results
  - The extent to which FRMS are being diversified and aligned – which is assumed to lead to increased flood resilience – as well as drivers for and barriers to such a diversification.
  - The roles of actors involved in flood risk governance and the division of responsibilities between public and private actors, including citizens.
  - Observed diversification of rules and regulations relevant for flood risk governance and the challenges related to the development of appropriate rules that are enforceable and enforced.
  - ...



## Results of the project ([www.starflood.eu](http://www.starflood.eu))



### - Journal articles

- Special feature of Ecology and Society: *“Towards more resilient flood risk governance”*
  - S. Priest, C. Suykens, M. Van Rijswick, J. Beyers, a.o. *“The European Union approach to flood risk management and improving societal resilience: Lessons from the implementation of the Floods Directive in six European countries”*
- Other articles
  - E.g. The Journal of Water Law: H.K. Gilissen, J. Beyers, C. Suykens, a.o. *“Bridges over Troubled Waters – Towards an Interdisciplinary Framework for Evaluating the Interconnectedness within Fragmented Domestic Flood Risk Management Systems”*
- Policy briefs
  1. *Towards improving the implementation of integrated flood risk management*
  2. *Improving flood risk governance in the European Union*
  3. (per country) *Strengthening Flood Risk governance in Belgium*



## Results of the project ([www.starflood.eu](http://www.starflood.eu))



- **Practitioner's Guidebook**
- **Conferences & workshops**
  - Final conference
    - Brussels, 4 February 4<sup>th</sup> 2016
  - Expert panels
    - E.g. Brussels, 17 November 2015
  - Other conferences, workshops, ...
    - E.g. ECCA: Copenhagen, 14 May 2015
    - E.g. National workshop Belgium: Brussels, 26 March 2015
    - E.g. Case study workshop Geraardsbergen / Lessines: 19 January 2015

