

IRISH FLOOD PREVENTION PROGRAMME

Example of integrating climate change
adaptation into projects

JASPERS Networking Platform Event
Climate Change Adaptation:
Vulnerability and Risk Assessment and the Resilience of Major
Infrastructure Projects
8th June 2016

- EIB project background
- Vulnerability assessment
- Integrating climate change adaptation into FRM programme and projects designs

- The programme comprises of a number of flood protection projects implemented in the framework of the national policy for flood risk management and the national Catchment Flood Risk Assessment and Management Programme
- Project investment cost - EUR 445M
- EIB loan - EUR 200M
- Implementation period till 2020
- Promoter - the Office of Public Works
- Projects designed by experienced consultants

Vulnerability assessment

- Long history of floods in Ireland
- Climate change likely to impact flood risk through
 - sea level rise
 - (likely) increase in heavy rains events
 - wetter winters
- All of the main cities are on the coast and many of the main towns are on large rivers
- Vulnerability assessment on local (project) level
- Strong adaptive capacity



- National Climate Change Adaptation Framework
 - provides strategic focus
 - identifies national vulnerability
 - prescribes sectoral plans preparation
- Climate Change Sectoral Adaptation Plan for Flood Risk Management
 - translates the potential climate change impacts into potential future scenarios that will inform flood risk assessment

Future scenarios

- Future scenarios for flood risk drivers include climate change:

Parameter	Mid Range Future Scenario (MRFS)	High End Future Scenario (HEFS)
Extreme rainfall height	+20%	+30%
Peak flood flows	+20%	+30%
Mean sea level rise	+ 0.5m	+ 1.0m

- Other drivers: land use/urbanisation in the catchment
- Time horizon 2100

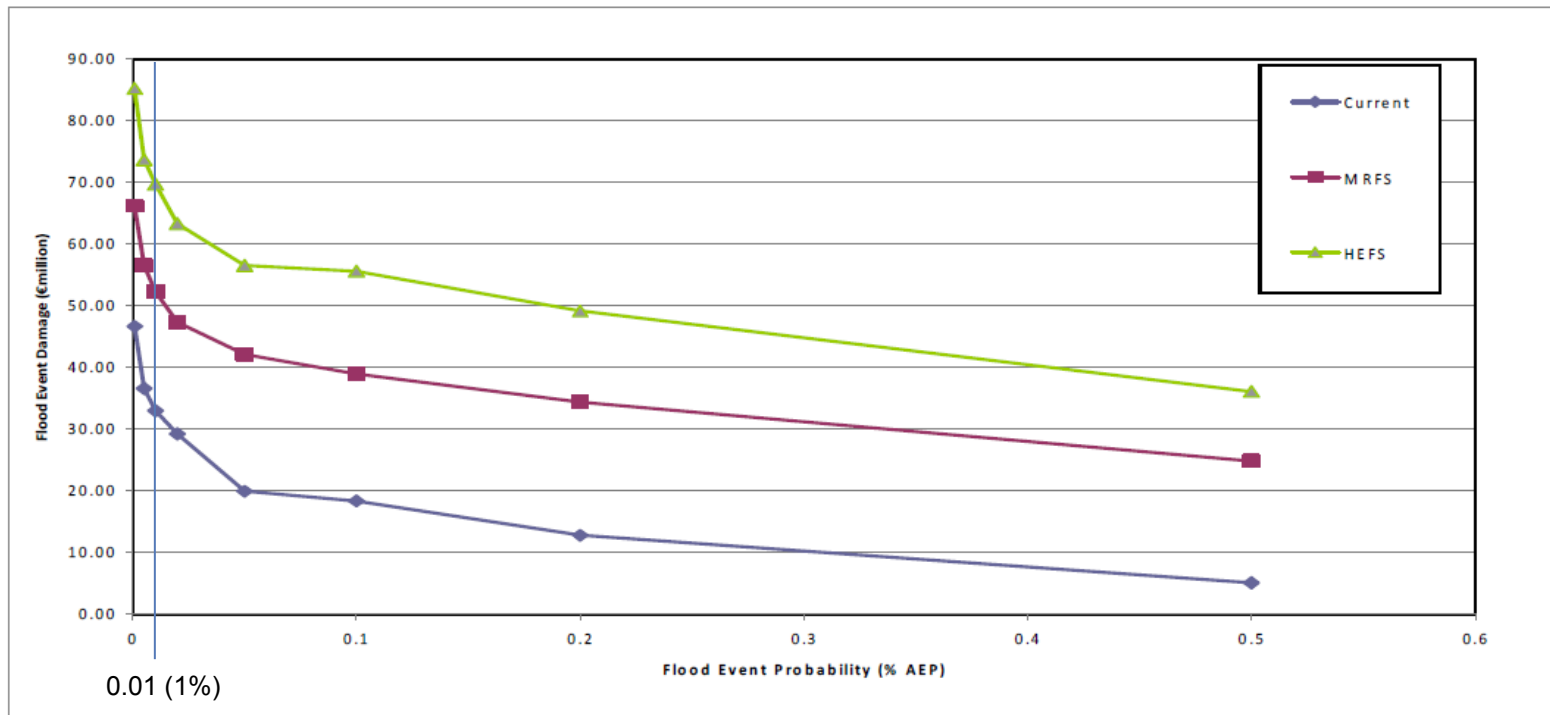
Project example

- Lee Catchment Flood Risk Management Plan identifies a range of potential flood risk management options for the particular areas within the catchment
- MRFS scenario to map the extent of floods
- MRFS and HEFS both considered in designs



Impact of the scenarios

Expected economic damages from coastal and fluvial floods in Clonakilty under three scenarios



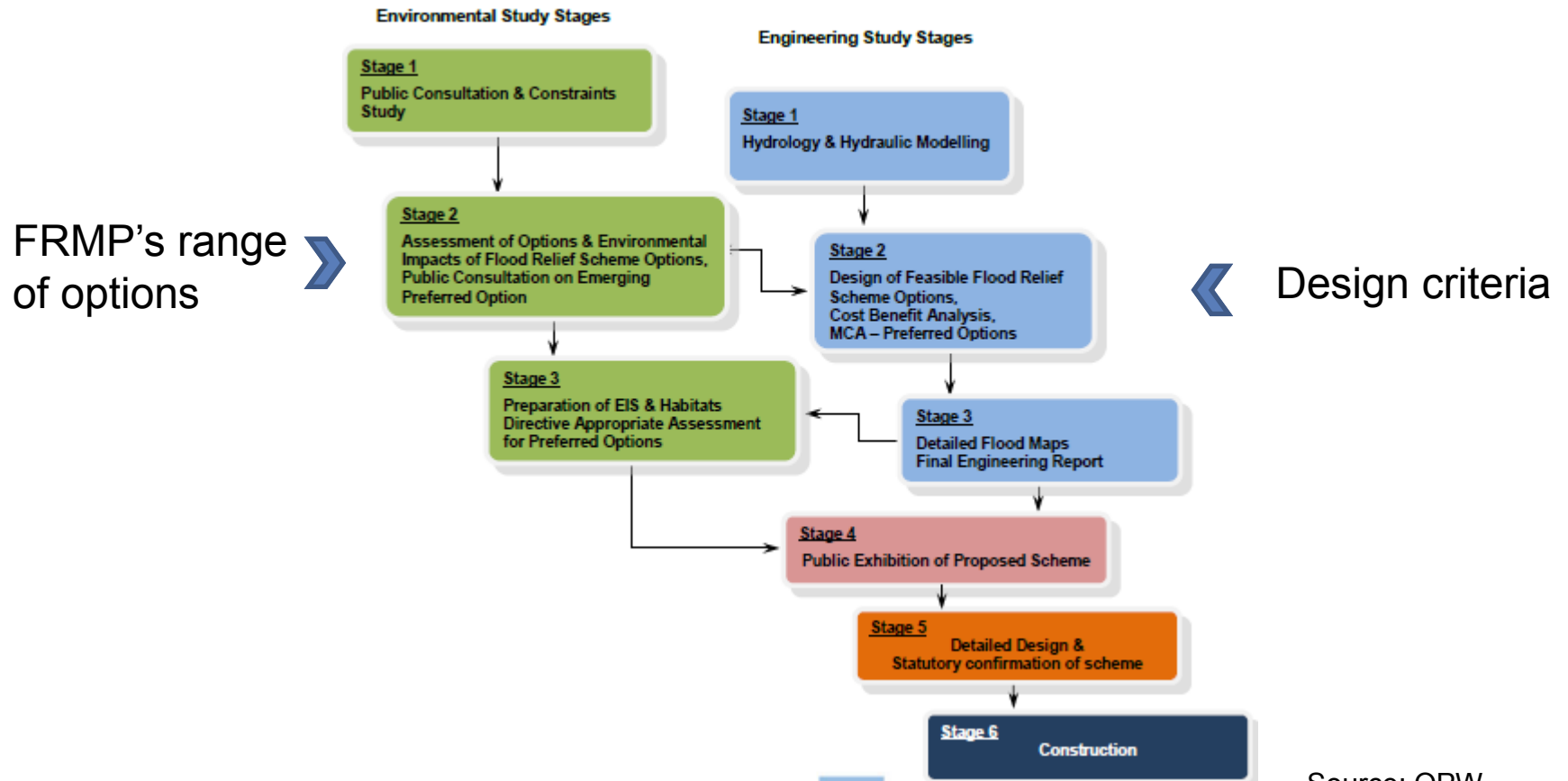
Source: Climate change sectoral adaptation plan – Flood risk management (2015-2019).

Option selection

- Options selection through Multi Criteria Analysis that considers technical, economic, social and environmental criteria
- Technical criteria ensure that flood risk management options are adaptable to future flood risk, and the potential impacts of climate change

From FRMP to project

Lower Lee (Cork City) Flood Relief Scheme Process



Source: OPW

Short-term adaptation responses:

- No provision
- Adaptable solutions
- Assumptive solutions

while considering long-term flood risk management strategy – adaptation pathways

Project example

- Cork City is prone to both tidal and fluvial flooding
- Under current scenario extensive tidal flooding occurs for the 1% event with large areas of Cork City Centre, affected
- Fluvial flooding generally starts at the 20% event and is significant for 10% event
- For the 50% MRFS tidal event, flooding affects a significant area of the city centre
- Generally, there is more extensive flooding in the city centre for the events with a higher probability of occurrence when compared to the current scenario



Project example

- Non-structural measures included (flood forecasting BCR = 8)
- Adaptability to future flood risk to be achieved through adequacy of foundations and provision for incremental increase of the defence height (BCR 1.3)
- Tidal barriers not viable under current flood risk, but BCR expected to reach 1 between 2050 and 2075. (Current cost estimate - EUR100M, BCR = 0.2)

Summary

- A well planned process
- Strategic option selection at programme level
- Simple methodological approach (scenarios)
- Adaptability of options

Contact

Dr. Sebastian Hyzyk

s.hyzyk@eib.org

Water Management Division
Project Directorate



**European
Investment
Bank**

The EU bank



For info or further questions on this seminar and the activities of the JASPERS Networking Platform, please contact:

JASPERS Networking and Competence Centre

jaspersnetwork@eib.org

www.jaspersnetwork.org