Ecosystem benefits from safety operations in river Meuse

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Project Location, The River Meuse
Present Situation
Are Safety Operations Necessary?
A new Strategy?

Why not simply rising the dikes/embankments?

More intelligent river basin management is needed using wetlands and alternative methods to decrease the water levels in case of high discharges.
Wetlands, alternative Methods?

Main goal: reducing flood levels
• Deepening and widening of River Summer Bed
• Flood channels
• Creating of Retention areas
• River freedom – removing revetments

• Rising embankments at City’s
What are the disadvantages?

Disadvantages:
• More area is needed
• Land has to be obtained
• Some people have to move
• Contaminated Sediments
• Effects on agriculture
• Effects on shipping
Wqua

Waterstandsverschil t.o.v. 1995DGR (m)

DGR-kaden
1995DGR
Maatregelenpakket I (2015)

BB: km 155,7-174,2
verdieping km 109-120,4
Retentiegebieden LKW (Z en N fase 1)
PP2
Verdieping HWG Lomm, Well en Aijen km 114-134,4
Roermond
Venlo
Gennep
Lith
Maatregelenpakket I (2015)

Werken aan de Maas van morgen
De Maaswerken
How to handle Costs?

Make it a Programme with different stakeholders and create additional values
- Flood protection
- Nature conservation
- Inland navigation
- Gravel extraction
Costs

Costs flood protection and nature development:

€ 1.4 billion

Costs improvement shipping route:

€ 391 million
Advantages

• More Flexibility in handling floods
• Ecological benefits
• Opportunities for Recreation
• Industry benefits from gravel extraction
• Improving inland shipping
Who are involved in such a Programme?

- 3 Ministries
- 6 Water Boards
- 42 Dutch local authorities
- 1 Belgian Province
Side Channel
Natural banks
Widening of main channel
Deepening of main channel
Lowering of adjacent land
Flood channel
high water
low water
Basisprincipe uitvoering Grensmaas
Current situation

- clay cover
- gravel/sand layer
- subsoil

river deep in bed, partly because of gravel extraction

Belgium

Netherlands