ADAPTATION OR IMPROVEMENT OF DIKES AND DAMS

OBJECTIVE

Building new protections on identified weak points or heightening, broadening and strengthening existing ones.

DESCRIPTION

Re-enforcing the flood defence system can increase the stability and resistance of dikes and dams against dike breaching, e.g. by strengthening the inner core of the dike, or improving characteristics of the dike's surface that contribute to the overall stability of the dike. If re-enforcing the flood defense system becomes necessary due to climate change, recent studies advocate a three-step approach, considering spacing, broadening and raising consecutively. Dike design can have the aim of allowing water in certain conditions to overtop them without breaching. This is usually achieved by strengthening the inner wall of the dike, by dike broadening, or by developing a parallel dike system with enclosed retention polders using the space in between dikes to retain the water that washes over.

EXPECTED RESULTS

Provide more safety against flooding.

RESULT INDICATORS

Capacity [m^3] and height [m] of the dikes or dams

INVOLVED ACTORS

Engineers, builders and people living close to the dikes.

EXPECTED TIMELINE FOR ACTION

- Long term (> 10 years)

BEST PRACTICES

- Smolyan – Bulgaria
- Klaipėda – Lithuania
- Belgium
- Prague – Czechia
- Glasgow – Scotland
- Camargue – France
- Iceland
- UK
- Prov. Antwerpen (BE), Zeeland (NL)
- Norfolk Broadlands
- Netherlands

- Hungary
- Flanders - Belgium
- Kruibeke Bazel Rupelmonde – Belgium
- Nijmegeng – Netherlands
- Bilbao – Spain
- Sandomierz – Poland
- Marche Region – Italy
- Friuli Venezia Giulia Autonomous Region – Italy
- Marche Region – Italy
- Apulia Region – Italy

CRITICALITIES

Heightening and reinforcement of dikes can affect the landscape in a negative way; costs.

SCOPE OF THE ACTION

- Adaptation

TYPE OF PROPOSED ACTIONS

- Grey

SECTOR OF ACTION

- Coastal management
- Urban settlement
- Water resource management

CLIMATE IMPACTS

- Floods
- Other

IMPLEMENTATION SCALE

- Association of municipalities
- Municipality
- Region / Country

SOURCE

https://climate-adapt.eea.europa.eu/metadata/adaptation-options/adaptation-or-improvement-of-dikes-and-dams