Freistaat Thüringen
Ministerium für Umwelt, Energie, Naturschutz und Forsten

International Elbe Forum 2025

Examples of the implementation of flood protection measures in Germany

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Chairman of the LAWA AH small group NHW

Source: LaNaServ im Auftrag der TLUG

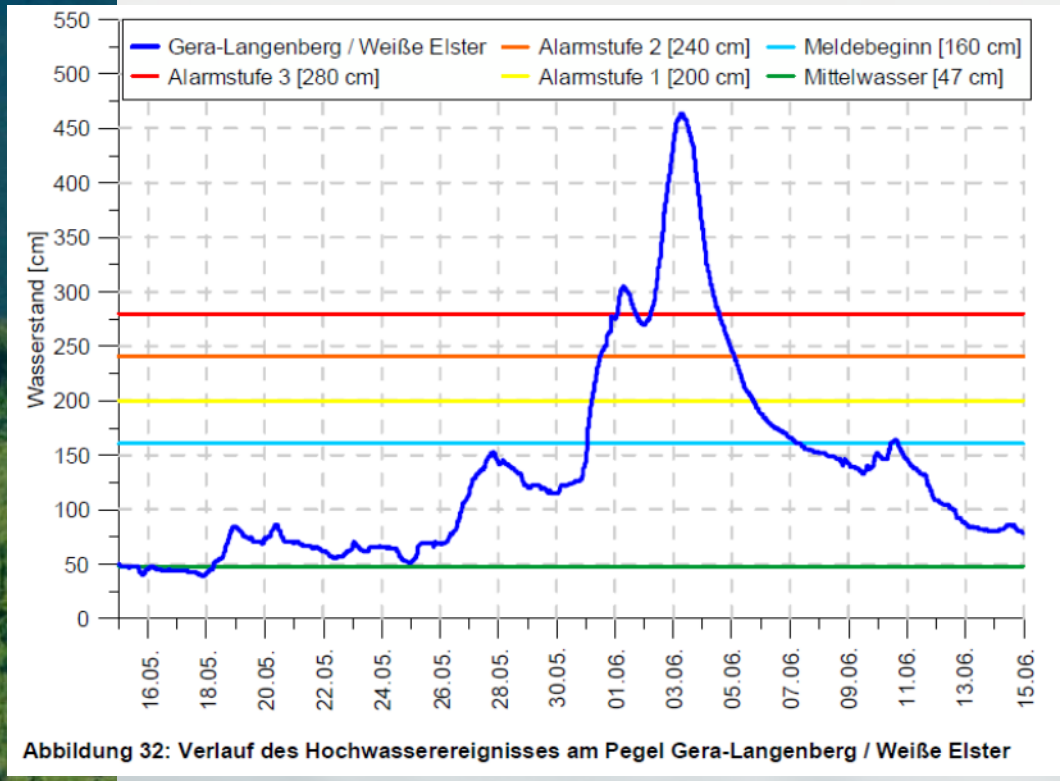
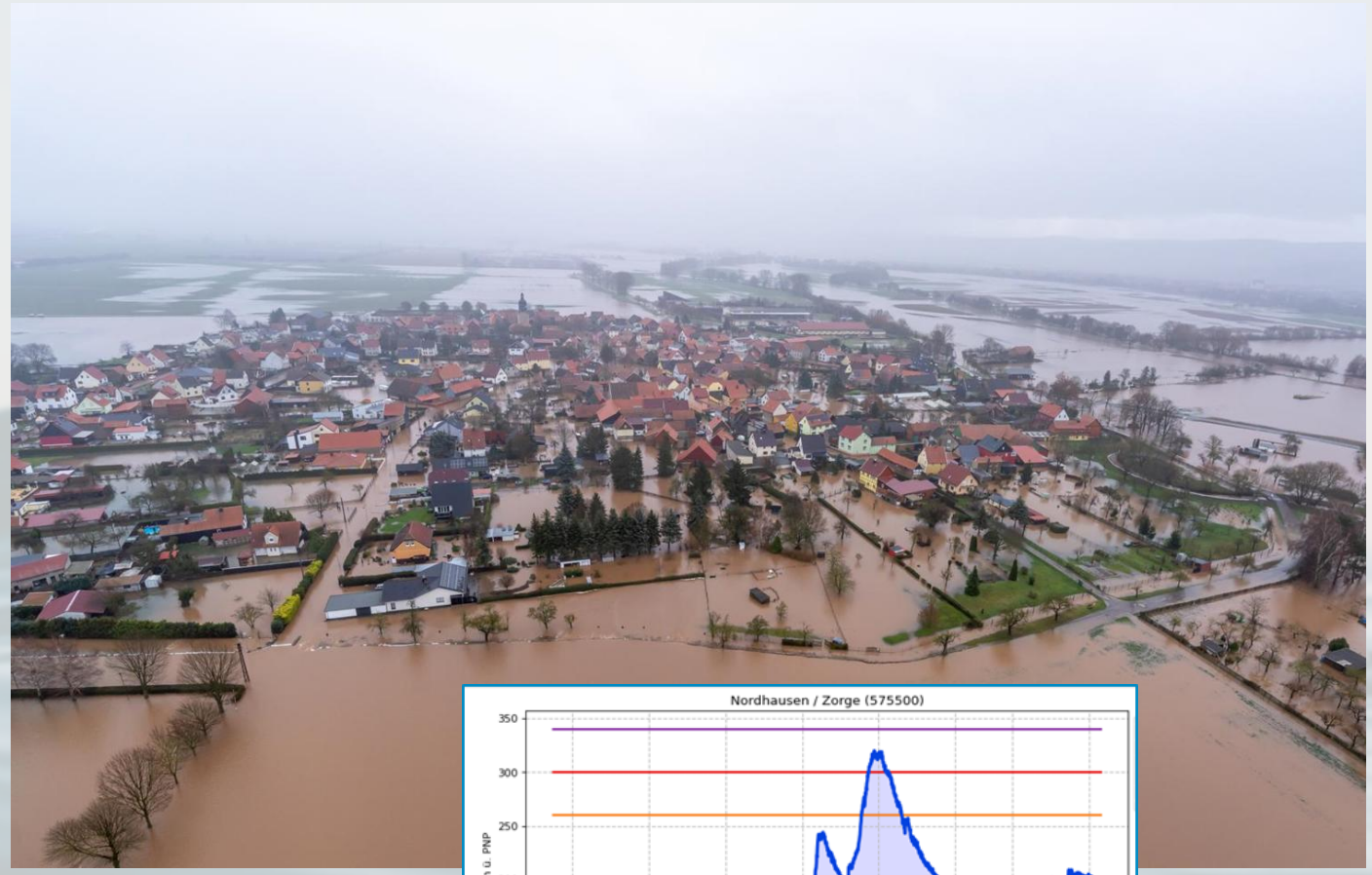
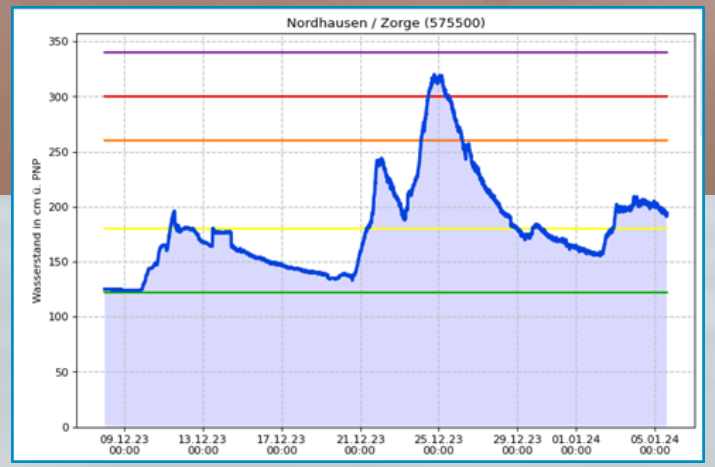
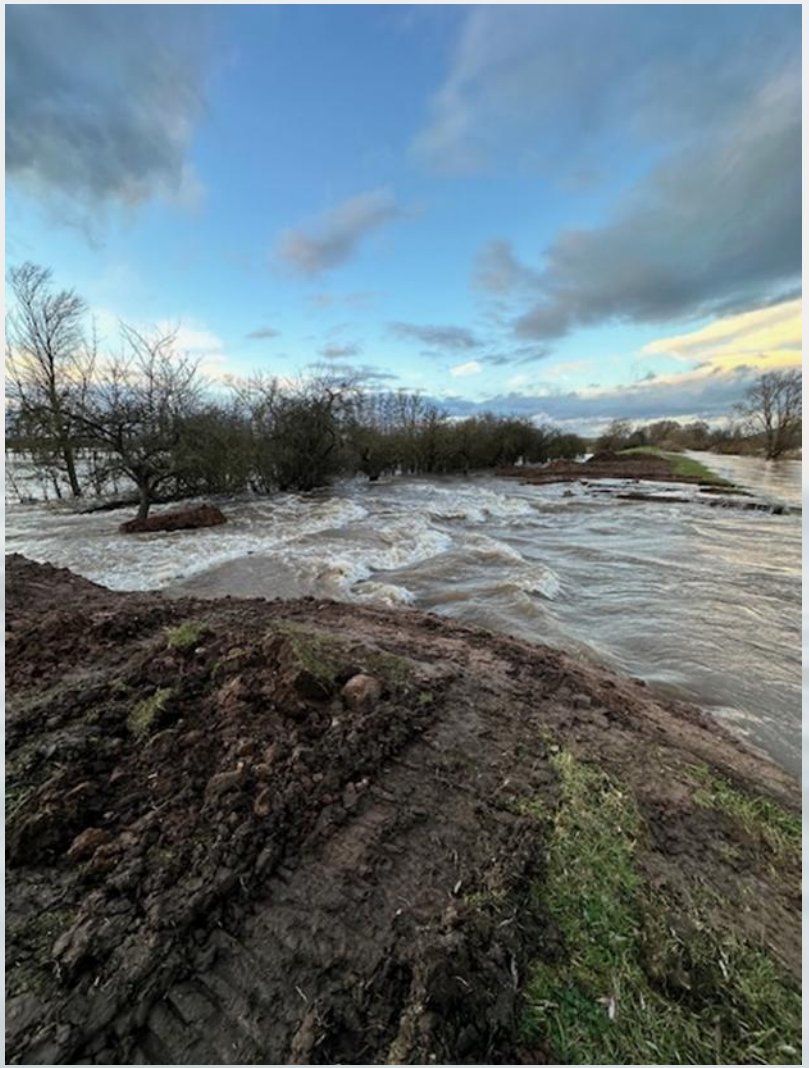


Abbildung 32: Verlauf des Hochwasserereignisses am Pegel Gera-Langenberg / Weiße Elster



(Source:)





Dyke opening on the Helme 28.12.2023
(Source:)

Development of the National Flood Protection Program (NHWSP)

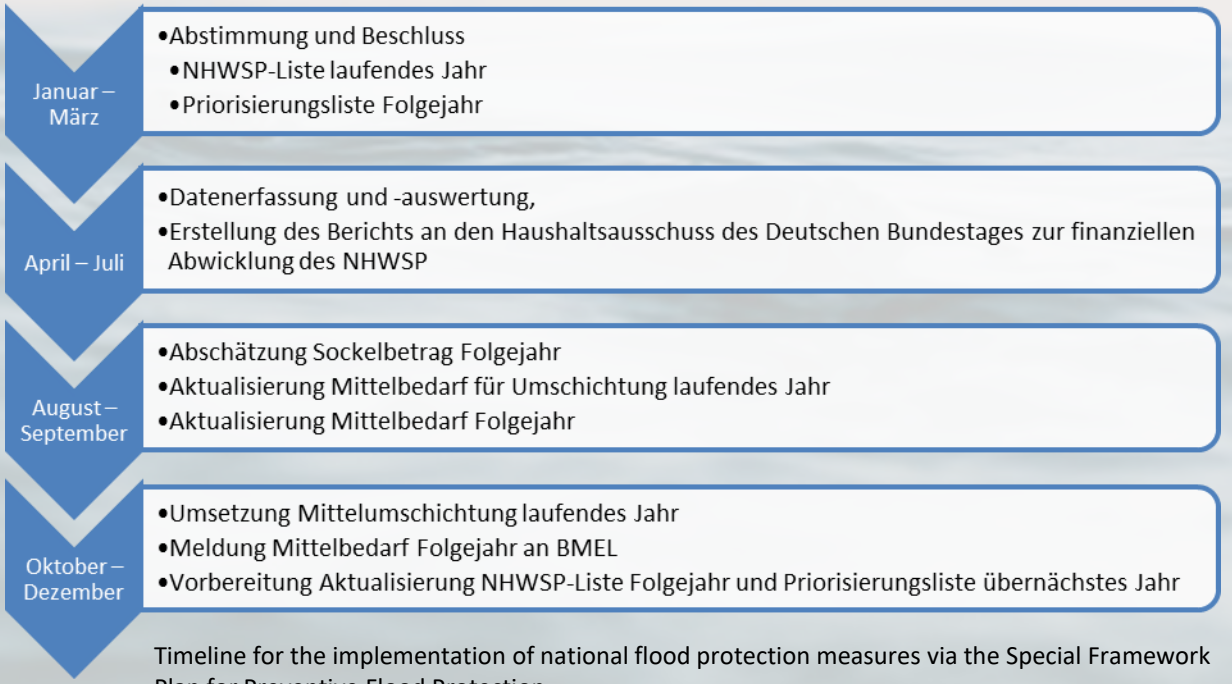
Special Conference of Environment Ministers on September 2, 2013

- Flood events 2002/2006/2010/2013 (2021!)
- enormous damage caused by flooding
- Importance of supra-regional flood protection in the river catchment areas was emphasized(Solidarity principle)
- to strengthen and accelerate implementation, it was decided to draw up a **national flood protection program**
- including measures with a supra-regional impact
- categories: Controlled flood retention, dike relocation and elimination of weak points
- with special priority and funding
- Federal/state working group on water was commissioned

Joint federal and state funding

Coordination of earmarked funds via KG of the LAWA-AH

- Technical
  - z. B. Nachmeldung über FGG‘en
- Budgetary
  - Resource planning
  - Reallocation of funds
  - Outflow of funds
- Organizational
  - Reporting obligations



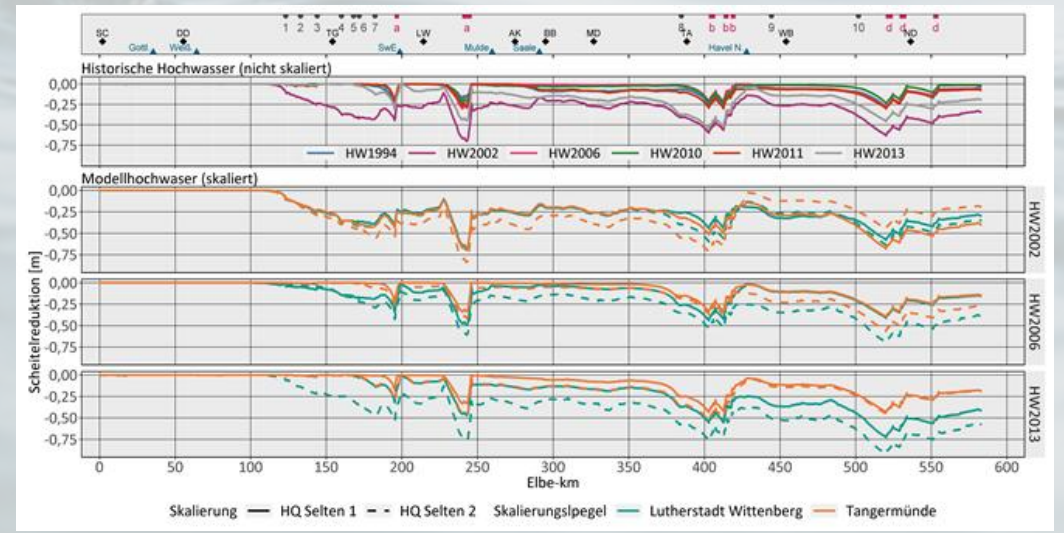
Timeline for the implementation of national flood protection measures via the Special Framework Plan for Preventive Flood Protection

Scientific support

Large-scale impact analysis for the Danube, Elbe and Rhine(FuE BfG)

- The measures of the federal states in the NHWSP can make a significant large-scale contribution to lowering the crests of floods on the major rivers (measures on tributaries also have a considerable crest-reducing effect).
- both in terms of the overall impact of all NHWSP measures as well as with regard to their individual effects, the NHWSP has a strong supraregional component.
- BfG (Federal Institute of Hydrology)

  Reports 2047, 2048, 2049

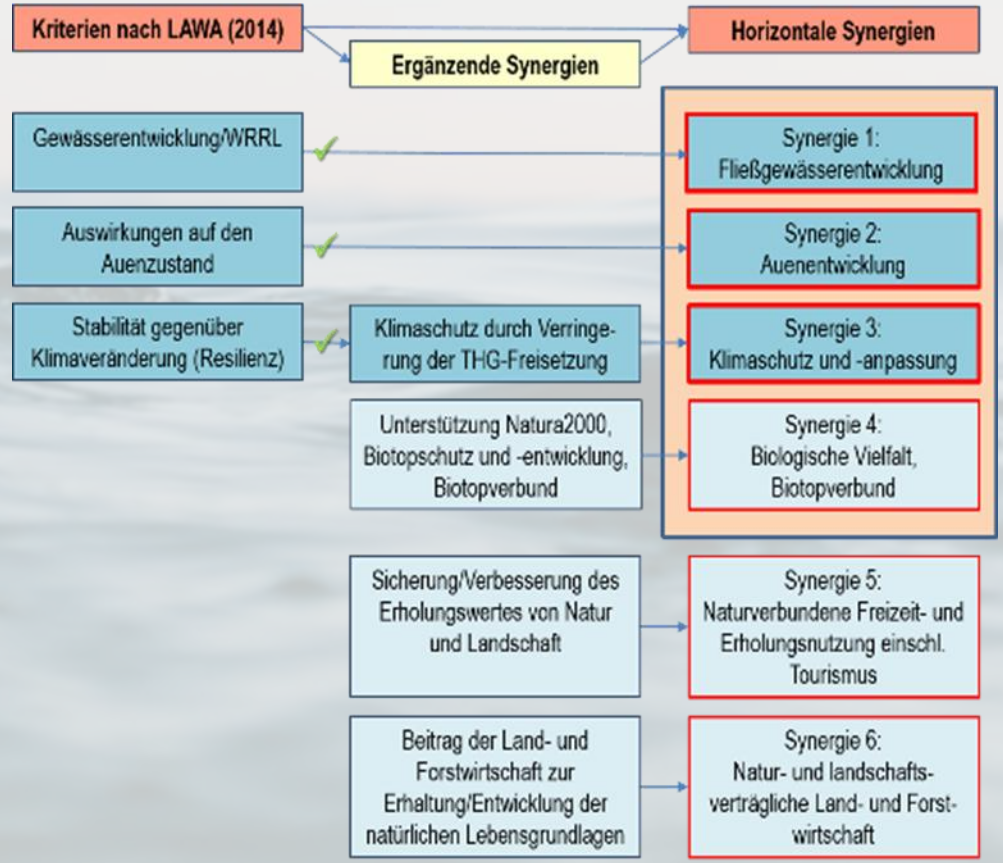


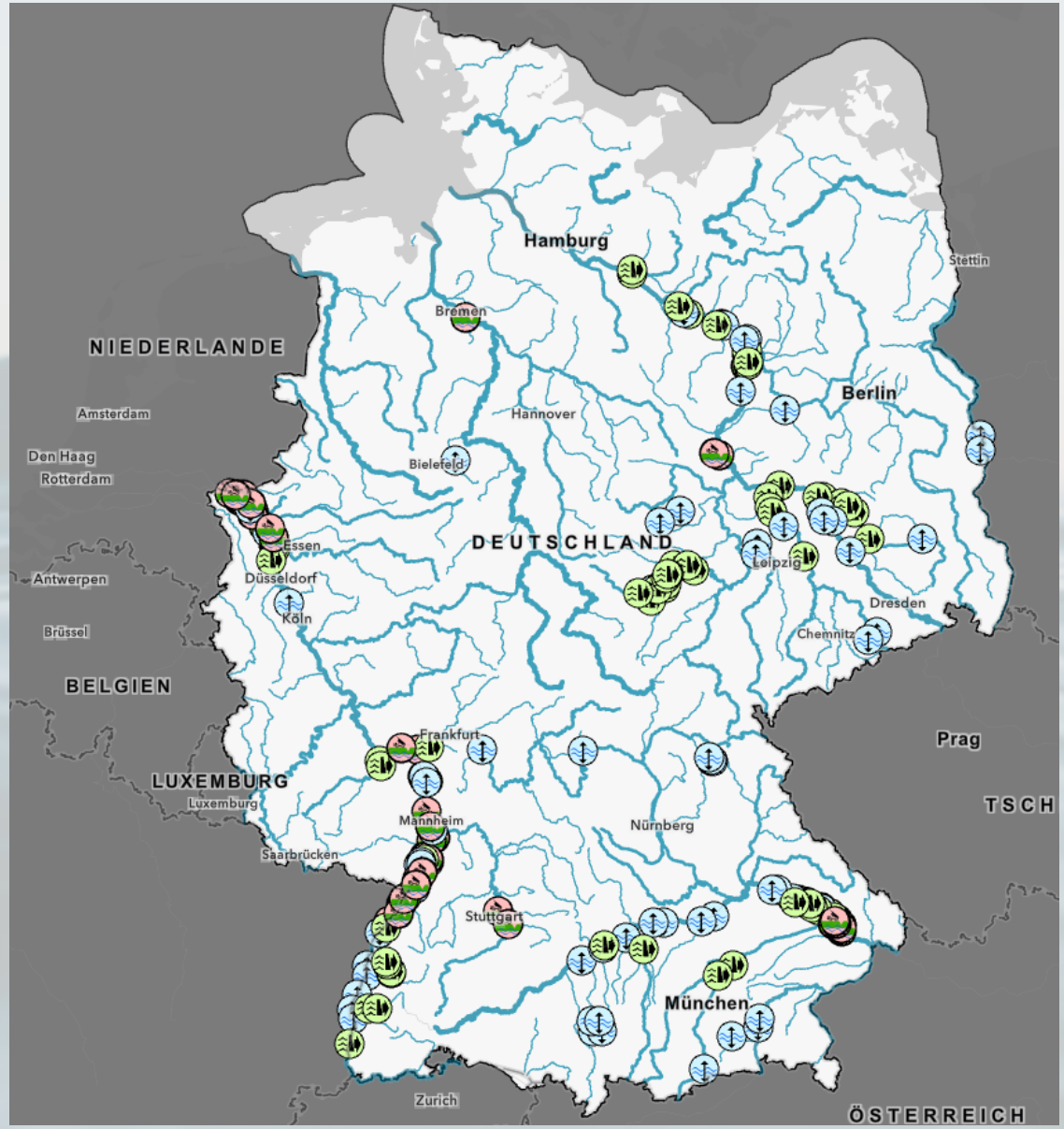
Longitudinal sections of the measure-related water level reduction on the Elbe between the referencestate 2018 and planned state 2027

Scientific support

synergies of the NHWSP with nature conservation, water ecology and climate policy objectives(FuE BfN)

- extension of the LAWA criteria to expand synergies
  - biodiversity
  - tourism
  - nature and landscape-friendly agriculture and forestry
- BfN-Schrift 638



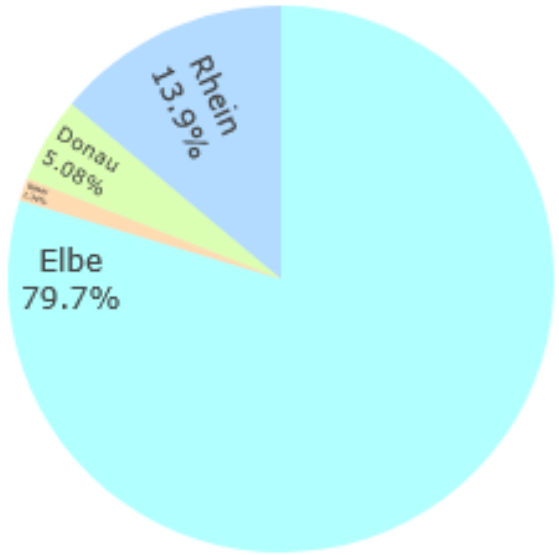


Latest:

- 36 individual and combined measures to relocate dikes and restore natural retention areas(DRV)
- 61 individual and combined measures for controlled flood retention (HWR) – essentially flood polders and flood retention basins
- 16 individual and combined measures to eliminate weak points(SSB)
- in total, these are 245 individual and partial measures (thereof 168 so-called spatial measures (DRV, HWR))

33.000 ha

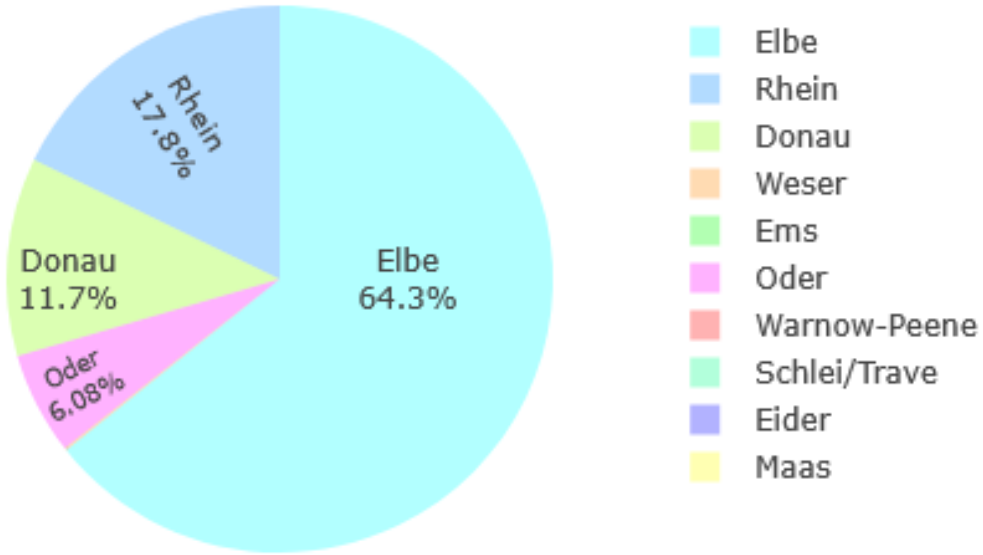
Flächen



Area distribution of the DRV category measures reported in the NHWSP to / in the Danube, Elbe, Oder, Rhine and Weser river basins (as at 2024)

1,3 Mrd. m³

Volumen



Volume shares of the measures newly created in the NHWSP in the HWR category (right-hand diagram) in the Danube, Elbe, Oder, Rhine and Weser river basins (as at 2024)

Maßnahmenliste 2025
Flussgebietsbezogene Kosten in den Planungszyklen der HWRM-RL

FGG	Maßnahmenkategorie	Kosten in Mio. Euro				
		2015-2021	2022-2027	2028-2033	nach 2033	Gesamt pro FGG
Rhein	Deichrückverlegung	102	114	338	84	637
	Hochwasserrückhalt	271	412	982	362	2.028
	Schwachstellenbeseitigung	182	217	143	152	694
	Gesamt	**554**	**743**	**1.463**	**598**	**3.358**
Donau	Deichrückverlegung	51	165	212	59	488
	Hochwasserrückhalt	122	145	302	310	880
	Schwachstellenbeseitigung	247	295	37	0	578
	Gesamt	**420**	**605**	**551**	**369**	**1.945**
Weser	Hochwasserrückhalt	0	1	10	0	12
	Schwachstellenbeseitigung	0	2	2	0	4
	Gesamt	**0**	**3**	**12**	**0**	**16**
Elbe	Deichrückverlegung	102	79	162	678	1.020
	Hochwasserrückhalt	47	178	217	653	1.096
	Schwachstellenbeseitigung	87	72	54	5	218
	Gesamt	**237**	**329**	**433**	**1.335**	**2.334**
Oder	Hochwasserrückhalt	1	0	0	40	41
	Gesamt	**1**	**0**	**0**	**40**	**41**
Gesamt		**1.213**	**1.680**	**2.459**	**2.342**	**7.694**

List of measures 2025: River basin-related costs in the planning cycles of the HWRM-RL (as at: 02.12.2024)

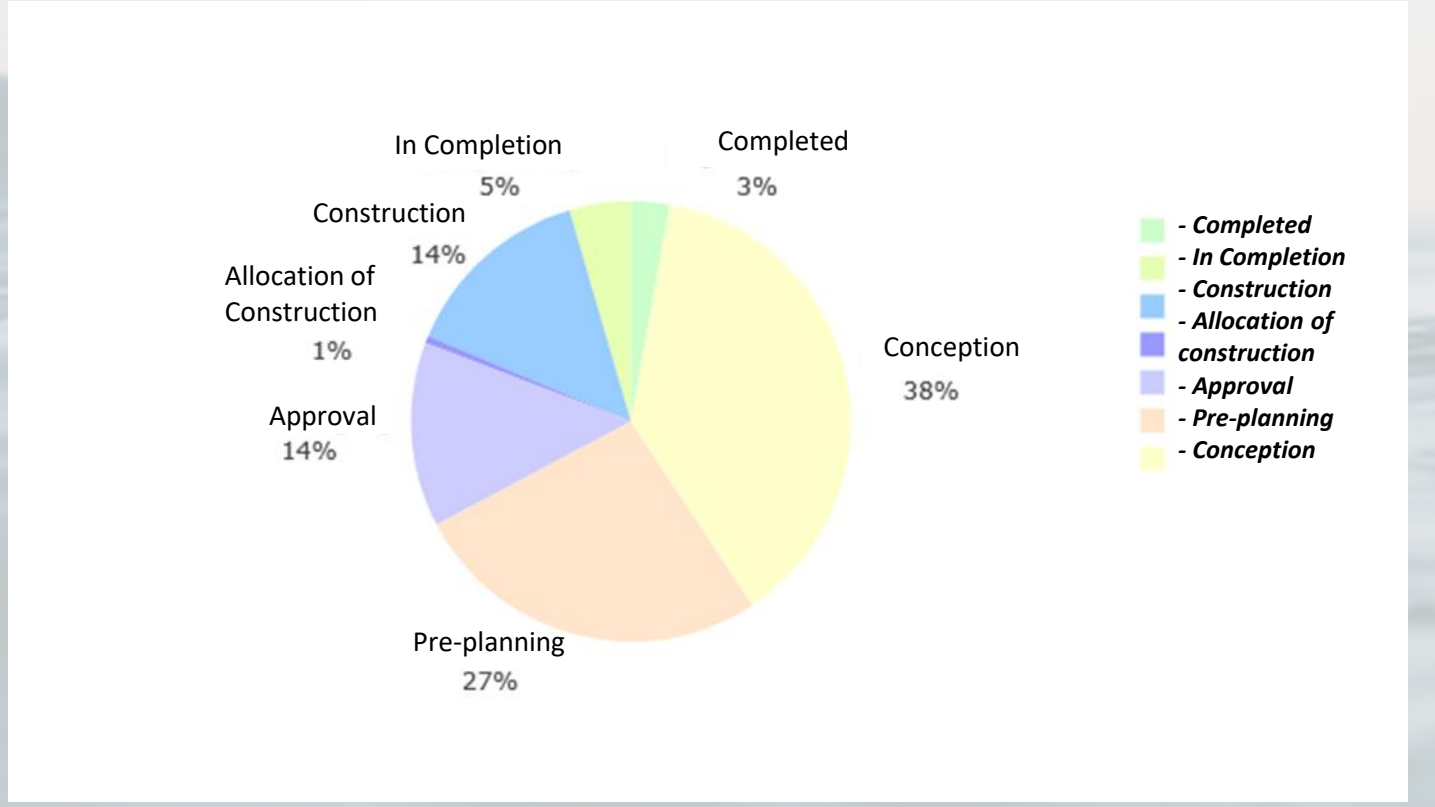
Latest:
2022-2027:

- Increasing the total volume through further measures
- from 6,2 Mrd. € to 7,7 Mrd. €

→ plus of 1,1 Mrd. €

- NHWSP-Federal funding requirements 2026 amounts **107.345.745 Euro**

Overview of the current implementation status of the spatial measures reported in the NHWSP



Particularly challenging to implement due to the size of the projects!!!

- geopolitical
- Communication
- lack of skilled workers
- long approval procedures
- lawsuits
- high space requirement
- Compensation
- Construction price increases
- …

Measures in the Elbe River Basin Community

- 37 dyke relocation – measures
- 22 flood retention – measures
- 6 weak point elimination – measures
- completed measures:
  - Elbe_ST_DRV_02701 - Altjeßnitz (Mulde-km 34-31)
  - Elbe_BB_HWR_08202 - Optimization of the Havel and Spree dam regime for flood retention (measure from Brandenburg und Berlin)
- total costs = 2,334 Mrd. €
  - dyke relocation → 1,02 Mrd. €
  - flood retention → 1,096 Mrd. €
  - weak point elimination → 218 Mio. €

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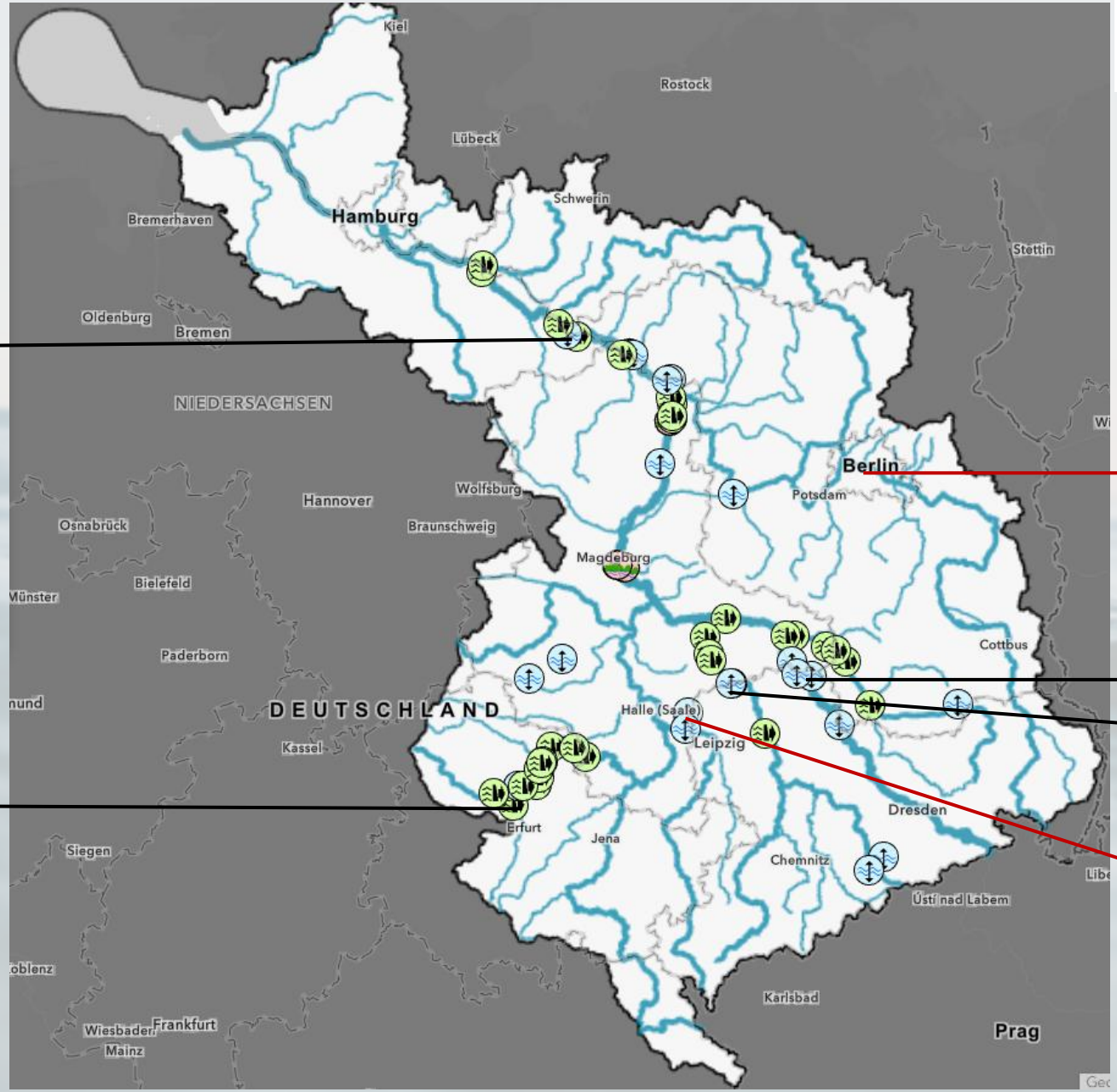
MV: Relocation of harbor dike and Elbe dike Boizenburg



BB: Flood retention Havel and Spree

ST: Polder Axien-Mauken

SN: Polder Löbnitz

TH: Dyke relocation northern Gera-Aue

ST: Dyke relocation Altjeßnitz

completed measures

further measures

Relocation of Boizenburg harbor dike and Elbe dike, new construction of Sudesperrwerk (MV)

occasion:

- new maximum water levels measured during floods in 2006, 2011, 2013,
- exceeding the water level by 6 cm, 10 cm and 52 cm,
- the redefinition of design flow rates and the water level required an expansion of the existing flood protection systems.
- Existing dam not structurally capable of sweeping new water level, therefore new construction required

aim:

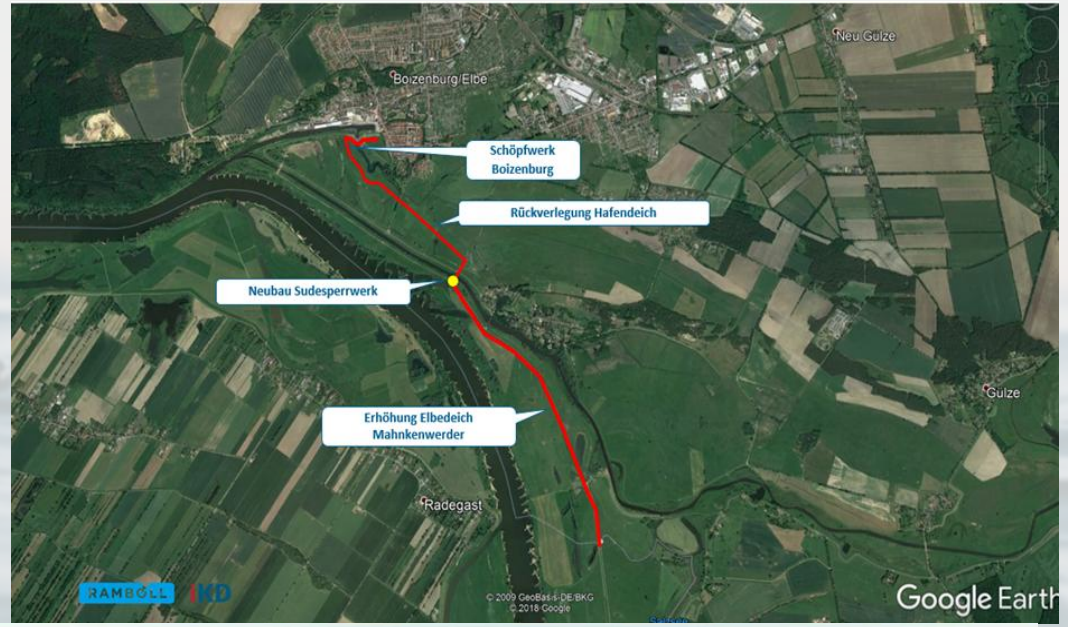
- improvement of flood protection for the Boizenburg area
- enlargement of the retention area in the Sude to protect the upstream villages in Mecklenburg-Vorpommern and Lower Saxony
- ecological enhancem
- ent of the biosphere reserve area

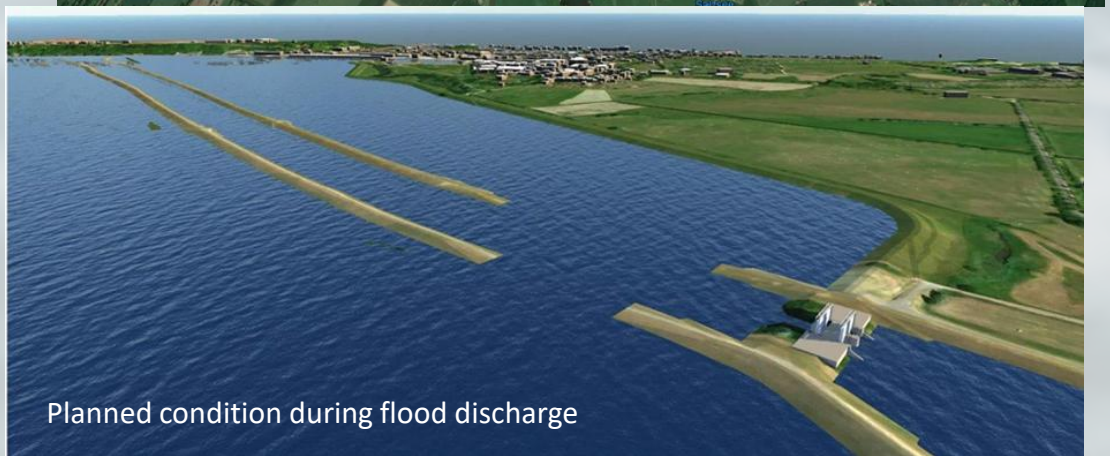
data and facts:

- reclamation of 124 ha of retention areas in Mecklenburg-Vorpommern and Lower Saxony
- planned start of construction→ 2026
- end of construction→ expected 2029

costs:

- total: circa 35 Mio. €
- 2025 → circa 900 T€




Planned condition during flood discharge

Polder Axien-Mauken (ST)

occasion:

- project area particularly affected by flooding due to geographical location in the former Elbe floodplain
- dike breaches in the past → flooding of large areas

aim:

- reduction Elbe water level by 20-30 cm in the region and forecast over the entire course of the Elbe up to the state border of Lower Saxony

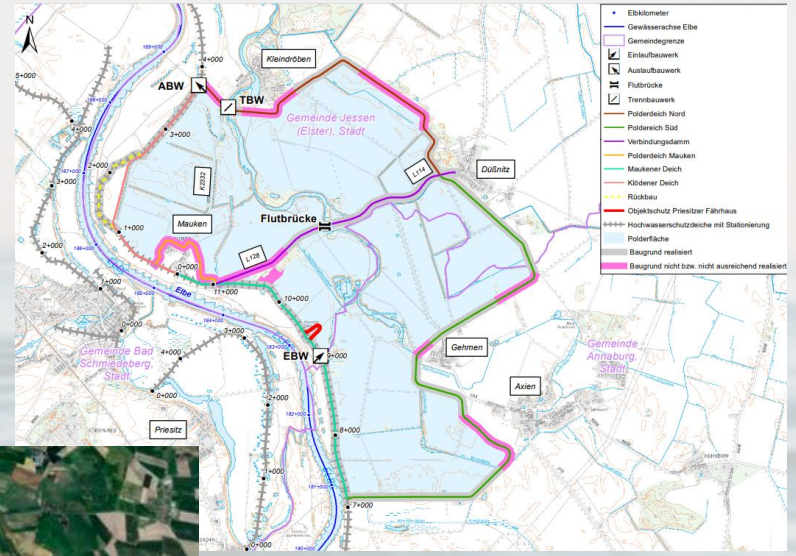
data and facts:

- 1,694 ha with a volume 52 million m³
- start of construction → expected ab 2030
- end of construction → expected 2045-2050

costs:

- total: 104 Mio. €
- 2025 → circa 3,3 Mio. €

Area of Action Polder Axien-Mauken



Site map Polder Axien-Mauken

Polder Löbnitz, Vereinigte Mulde (SN)

occasion:

- flood event 2002,
  extensive flooding + extremely high damage
- flood protection system too close to the water + constricted flood discharge area

aim:

- controlled flood retention
- Reduction of flood crest in the event of crest capping circa
  70 cm (for a flood frequency of 100 years)

data and facts:

- Retention volume/retention space with a volume of
  15 Mio. m³ for a flood frequency of 25 years / 1.436 ha area
- start of construction → 2013
- end of construction → 2029

costs:

- total: circa 53 Mio. €
- 2025 → 7,72 Mio. € (subject to provisional budget management)

Outlet construction *

Siel Yellow water *

Siel ferry lock *

*Source: Landestalsperrenverwaltung Sachsen,
Betrieb Elbe/Mulde/Untere Weiße Elster

Dyke relocation northern Gera-Aue (TH)

occasion:

- altered watercourse structure with unsatisfactory ecological potential
- Dykes too close to the water + constricted drainage cross-section

aim:

- ecological enhancement of the watercourse
- rainage of frequent flood events(for a flood frequency of 20 years)

data and facts:

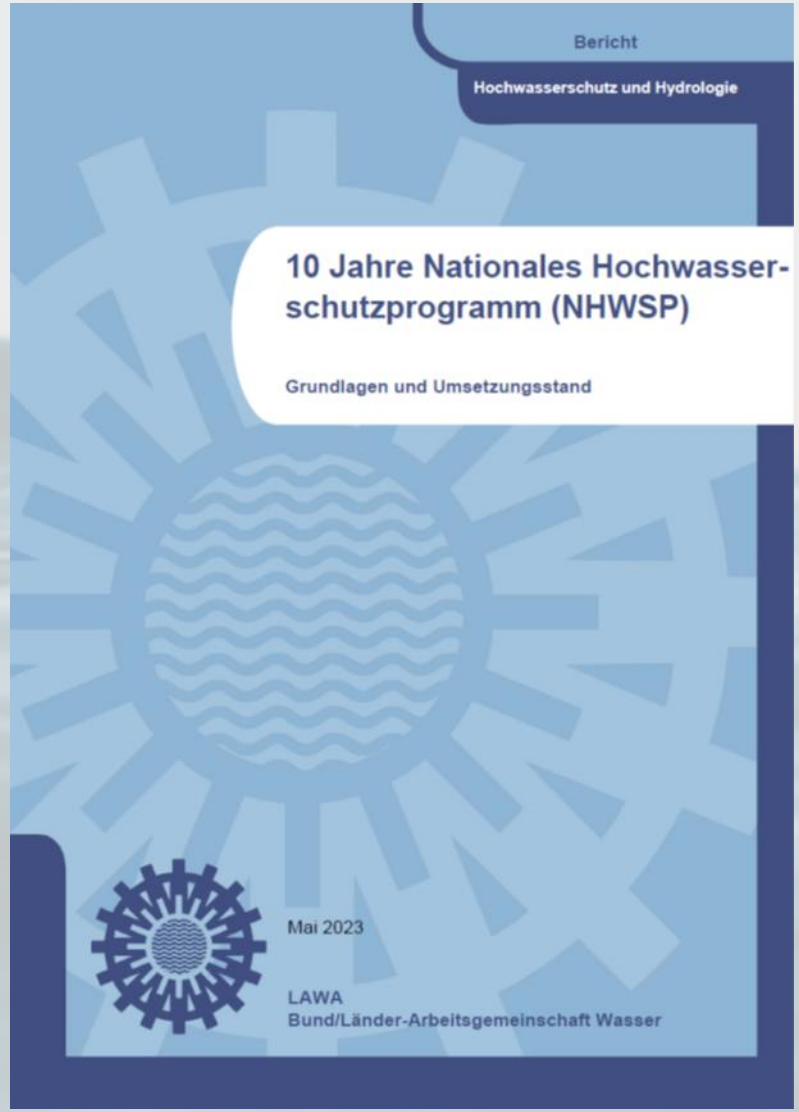
- reclamation of 840 ha of recent floodplain
- start of construction → 2015
- end of construction → 2038

costs:

- total: 63 Mio. €
- 2025 → 1,95 Mio. €

Dike relocation and watercourse structuring near Walschleben, 04/2020 (Source: Y.Voigt, ThLG)

Reinforcement of dike near Ringleben, 04/2022 (Source: S.Olbrich, ThLG)


Bericht
Hochwasserschutz und Hydrologie
10 Jahre Nationales Hochwasser-schutzprogramm (NHWSP)
Grundlagen und Umsetzungsstand
Mai 2023
LAWA
Bund/Länder-Arbeitsgemeinschaft Wasser

Thanks a lot!