



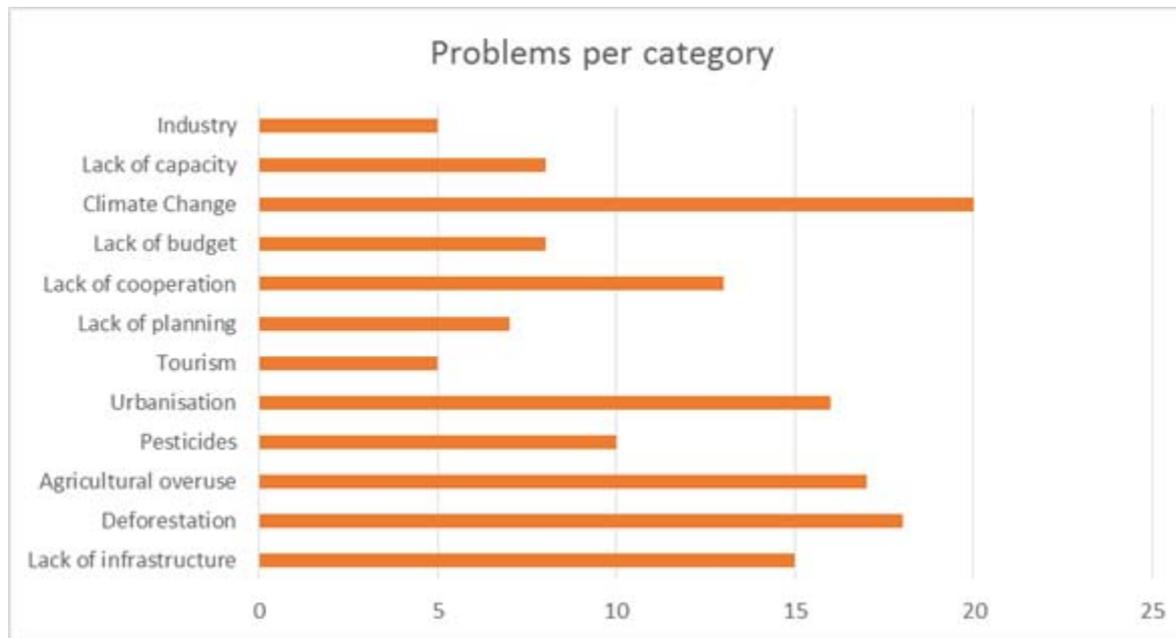
Ecosystem-based Adaptation in the Water Sector

by Roland Treitler



Experiences from Thailand

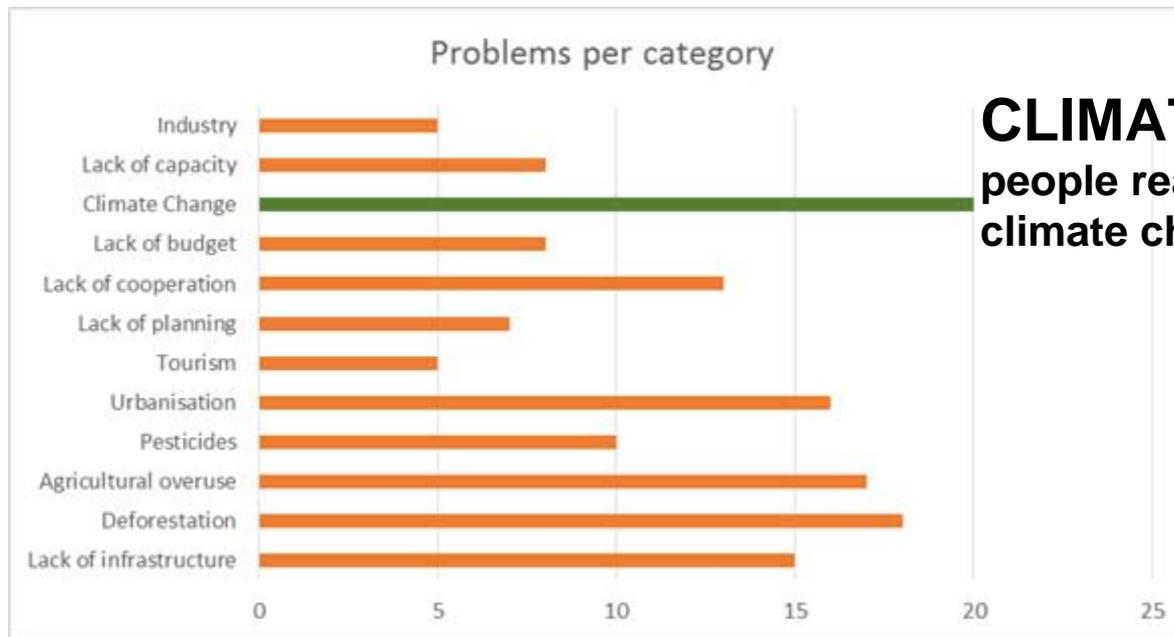
- Problems mentioned in public hearings (Sep 2014)





Experiences from Thailand

- Problems mentioned in public hearings (Sep 2014)

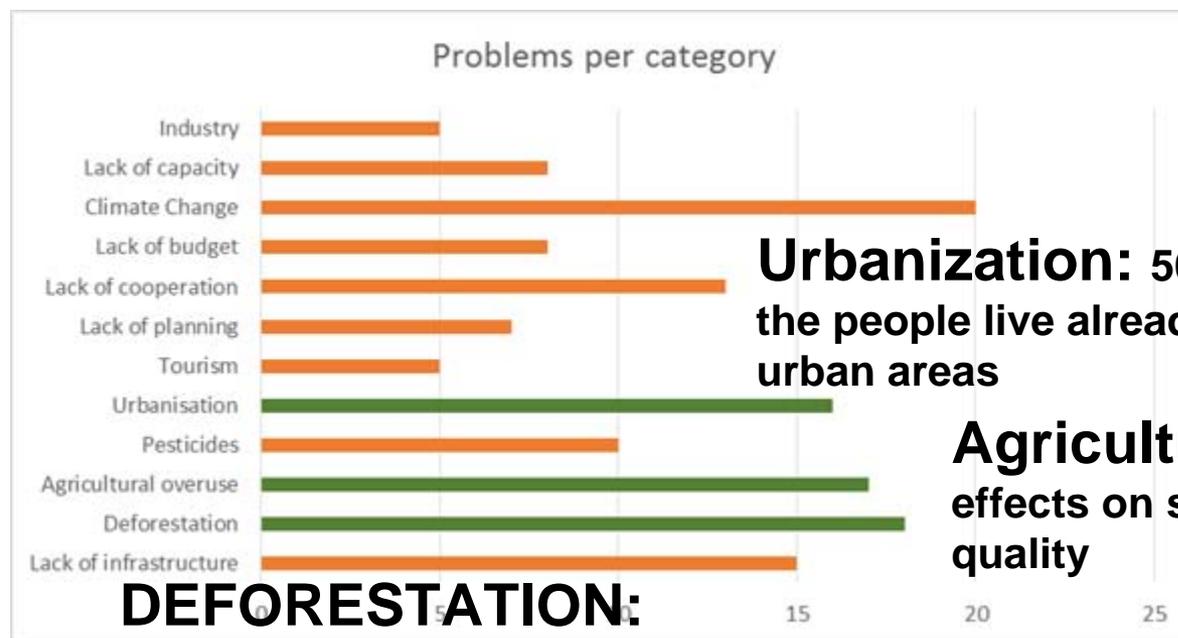


CLIMATE CHANGE:
people realize effects of the
climate change



Experiences from Thailand

- Problems mentioned in public hearings (Sep 2014)



Urbanization: 50% of the people live already in urban areas

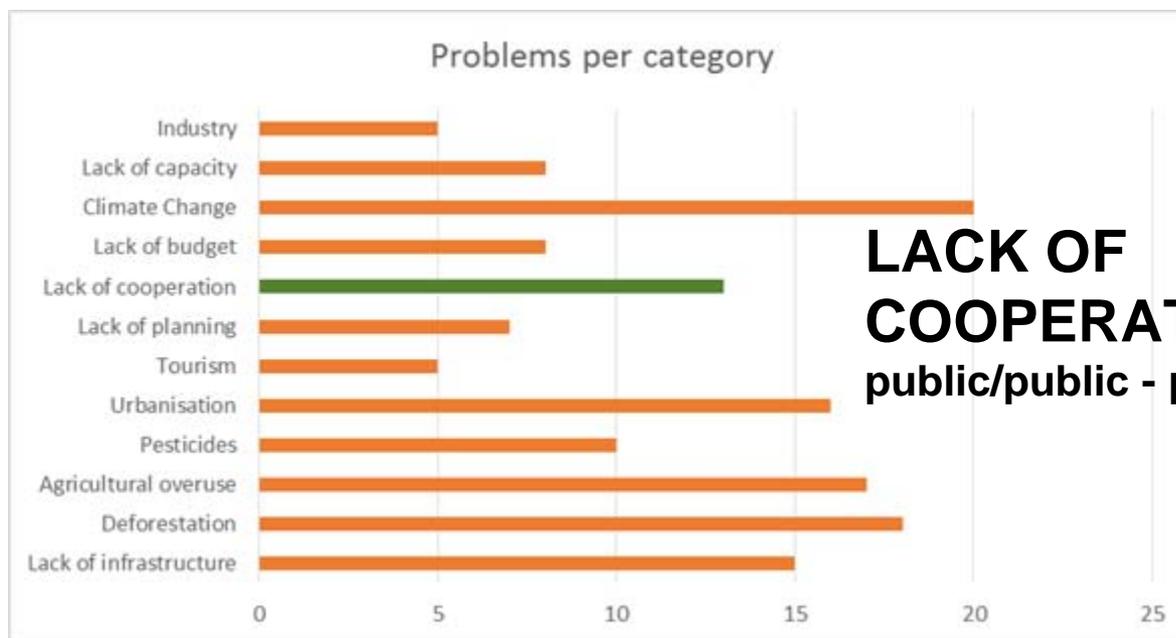
Agricultural overuse: effects on soil and water quality

DEFORESTATION: correlation between land coverage with forest and floods



Experiences from Thailand

- Problems mentioned in public hearings (Sep 2014)

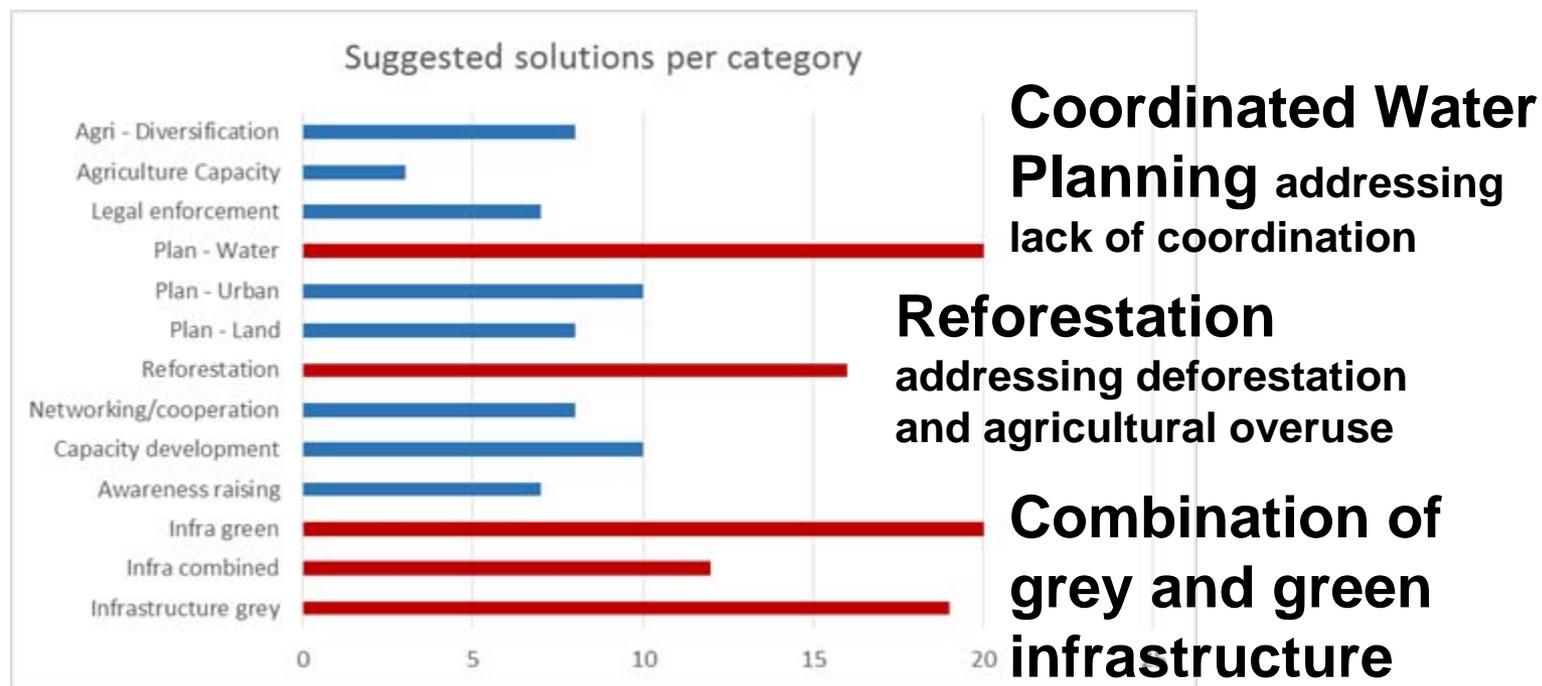


LACK OF COOPERATION:
public/public - public/private



Experiences from Thailand

- Solutions mentioned in public hearings (Sep 2014)





Experiences from Thailand

- Conclusion of the public hearings (Sep 2014)
 - Civil society is aware of the real problems
 - It is even able to suggest good solutions for the addressed problems
 - (Intuitive) understanding of cause-effect relations



Experiences from Thailand

Background Information on Tha Di Watershed

Causes for floods and droughts

- Deforestation
- Inefficient grey infrastructure
- Mismanagement of land use
- Lack of cooperation between local stakeholders and responsible authorities
- Lack of financial support





Experiences from Thailand

“Living Weirs” in the Tha Di Watershed

Approach

- Living weirs concept derived from local knowledge
- Bottom-up approach and participation from all stakeholders in the construction process
- Community involvement with governmental and private institutions (such as DWR, RID, Lion Club, Self-Reliance Institute)
- Scientific assessment and support from international and local institutions (Karlsruhe Institute of Technology and Walailak University)
- In accordance with The King’s Sufficient Economy Theory





Experiences from Thailand

“Living Weirs” in the Tha Di Watershed

Benefits

- Low cost weir structure based on tree roots
- Ground water recharge leads to higher production yield

Drawbacks

- Longer construction period
- No research on impacts so far





Example of a simple but most effective solution

Germany Brandenburg (Source: Matthias Freude, Land Brandenburg)



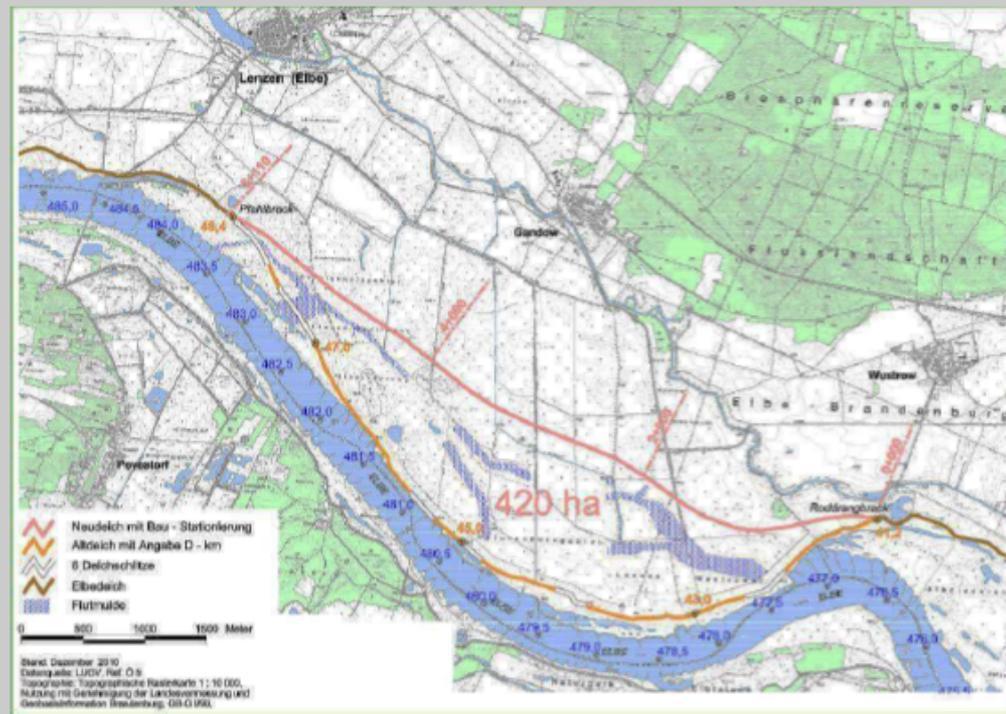
Germany Brandenburg (Source: Matthias Freude, Land Brandenburg)

Natural Retention Areas

Dike relocation river Elbe : 420 ha gained foreshore area

Technical Data Dike Relocation:

- Stream Kilometers
476,7 – 483,8
- New Dike Route
6.110 M
- Old Dike Route
7.189
- Max. Relocation
1.300 M
- Dike Crest
8,15 M + Freeboard





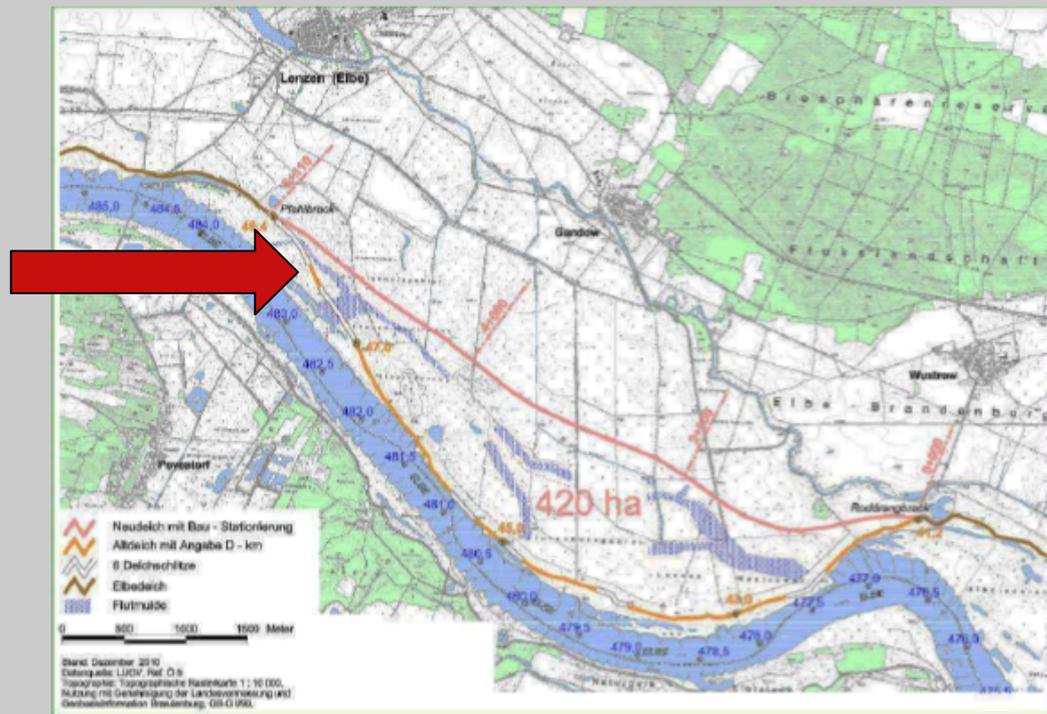
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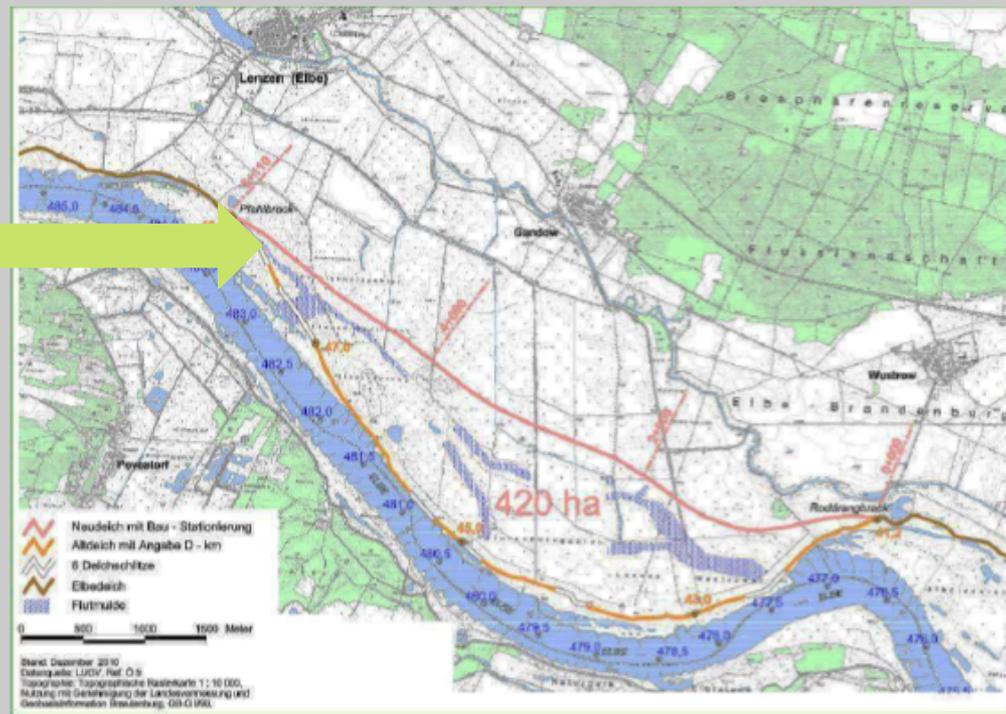
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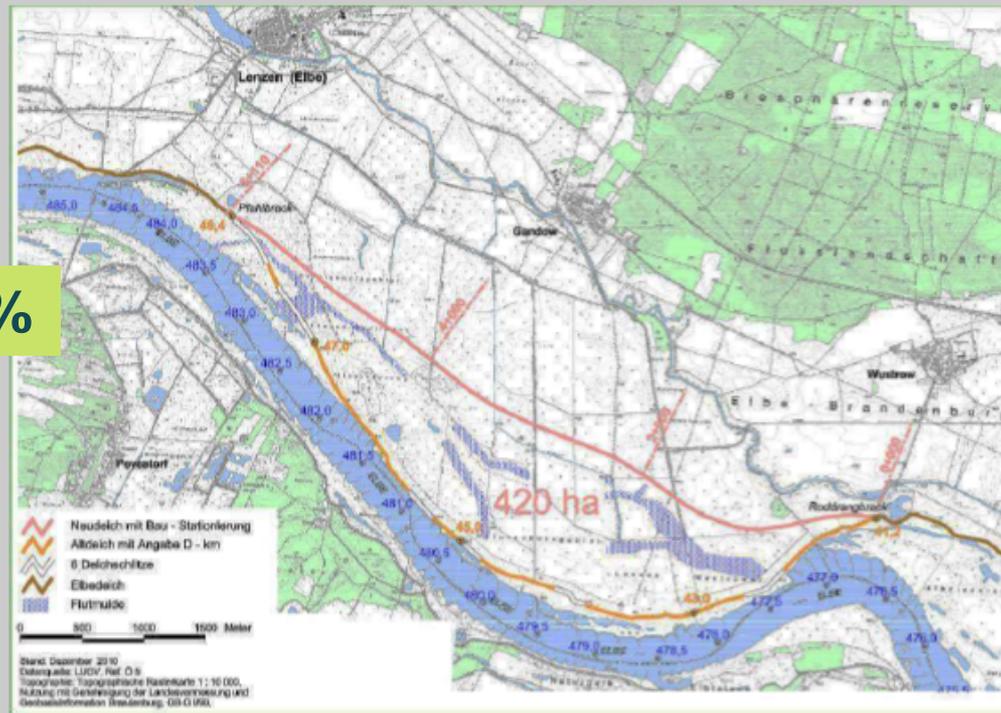
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-15%





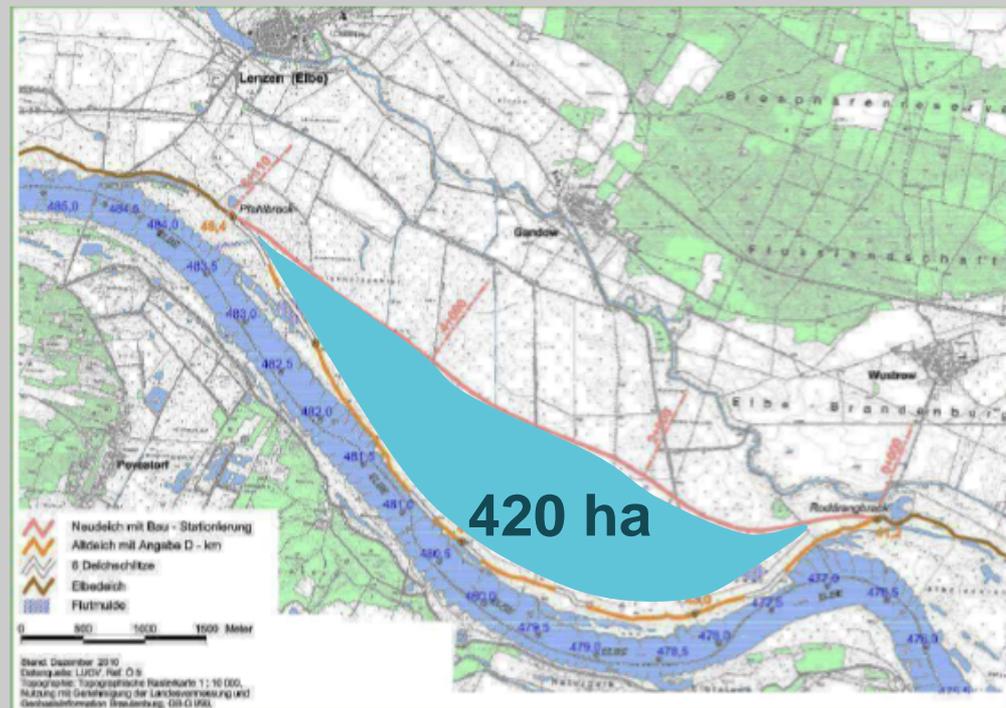
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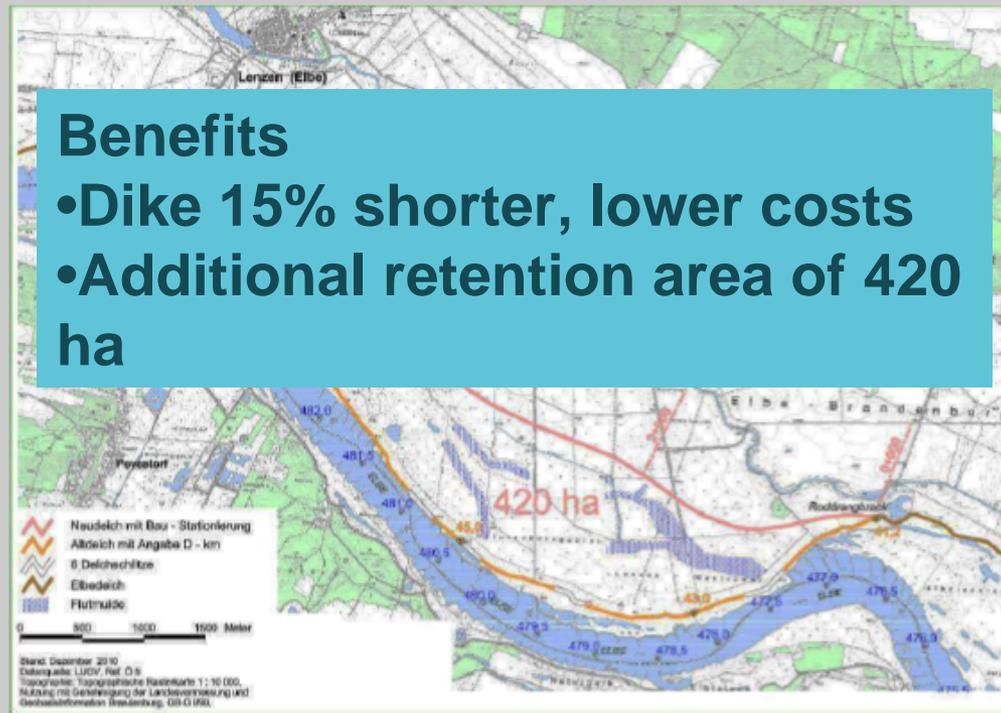


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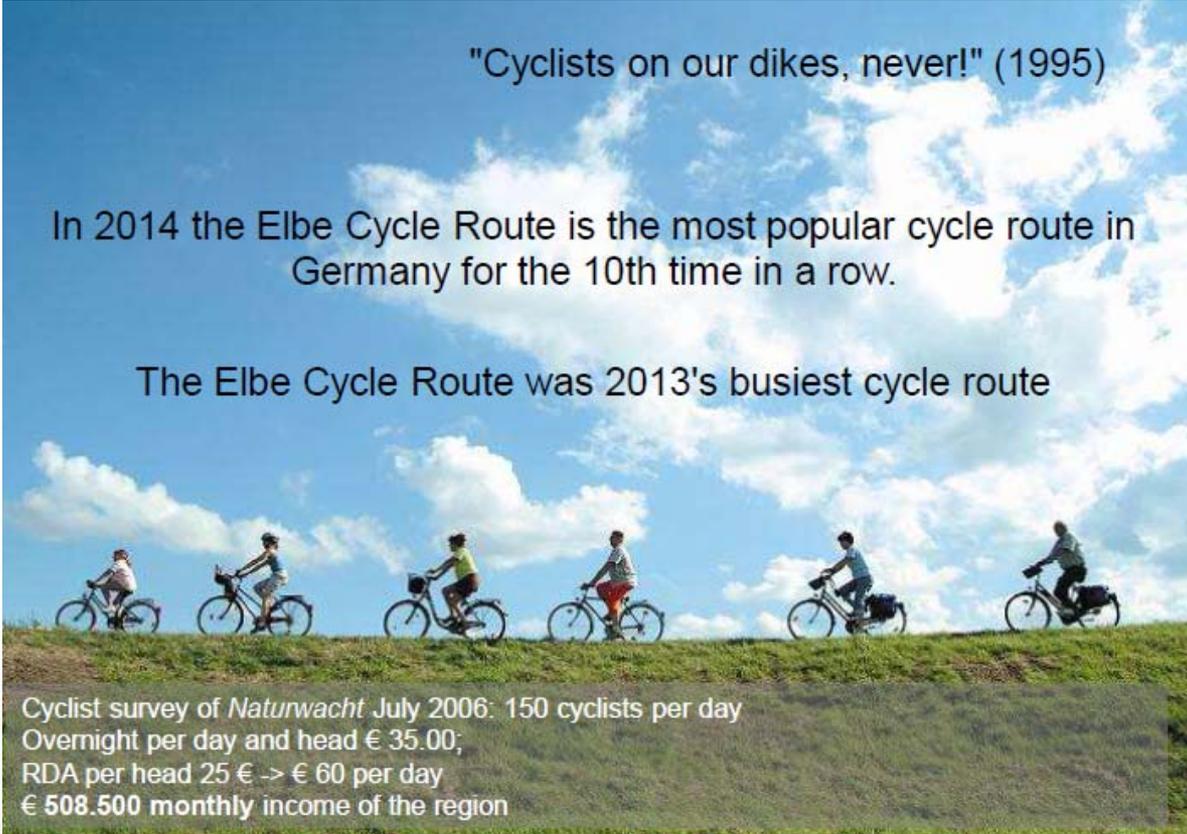


Additional benefit: near recreation area

"Cyclists on our dikes, never!" (1995)

In 2014 the Elbe Cycle Route is the most popular cycle route in Germany for the 10th time in a row.

The Elbe Cycle Route was 2013's busiest cycle route



Cyclist survey of *Naturwacht* July 2006: 150 cyclists per day
Overnight per day and head € 35.00;
RDA per head 25 € -> € 60 per day
€ 508.500 monthly income of the region



Thank you for your attention