

An aerial photograph of a city, likely Karlsruhe, showing a river (the Elz) winding through the urban landscape. The city is densely packed with buildings, and there are significant green spaces and parks. A large railway station is visible on the right side of the image. The text is overlaid on the center of the image.

**Implementation of the European Water  
Framework Directive in Baden-  
Württemberg:  
An example of ecological water  
development**

EURORAI, October 2009

***"Courtesy translation provided by the organisation"***

# EU Water Framework Directive of 2000...

---

- governs the protection of groundwater and surface water,
- requires that by 2015 all EU states bring their waters to a good condition (structural, biological, physical, chemical),
- allows that the period for extending the 2015 deadline for achieving this goal can only be extended to 2027 at the latest.

# Audit Commissioning

---

- What does it cost the state of Baden-Württemberg to implement the Water Framework Directive?
- What cost-cutting opportunities are there?
- How can the funding be realised within the prescribed timeline?

## Work areas in Baden- Württemberg

- **Baden-Württemberg:**
  - ~ 11 million inhabitants
  - ~ 35,000 km<sup>2</sup> area
  - ~ 4,000 km of water
- **River basin districts:**
- **Rhine, Danube**
- **6 internationally coordinated working areas:**
- **Alpenrhein, Hochrhein, Oberrhein, Neckar, Main, Danube**



Flussgebietseinheit Rhein - geplante Bearbeitungsgebiete

Maßstab 1:4000000

# Approaches to implementation

---

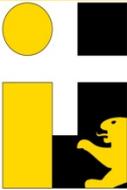
- Wastewater technical facilities
- Agricultural measures
- **Hydromorphology:**
- **Hydroecological and structural projects**
- **→ Focus on Baden-Württemberg (Topography)**

# Measures for flowing waters

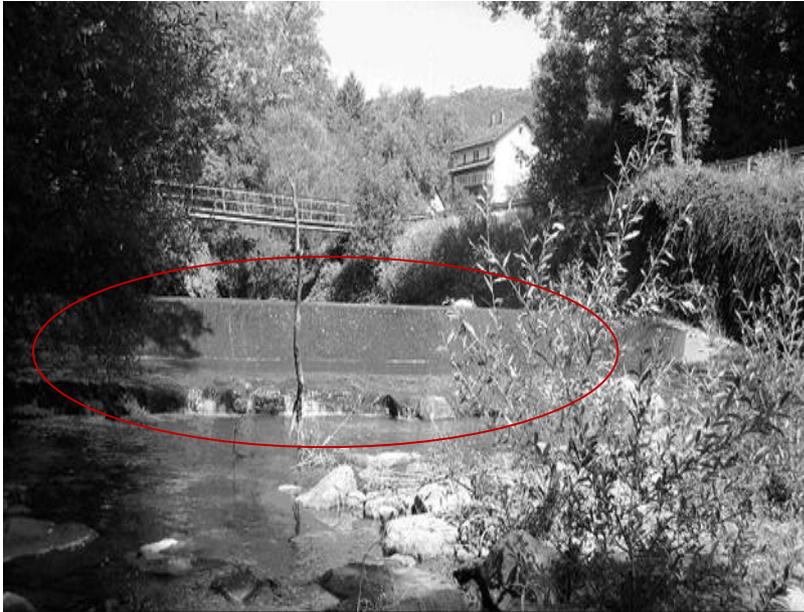
---

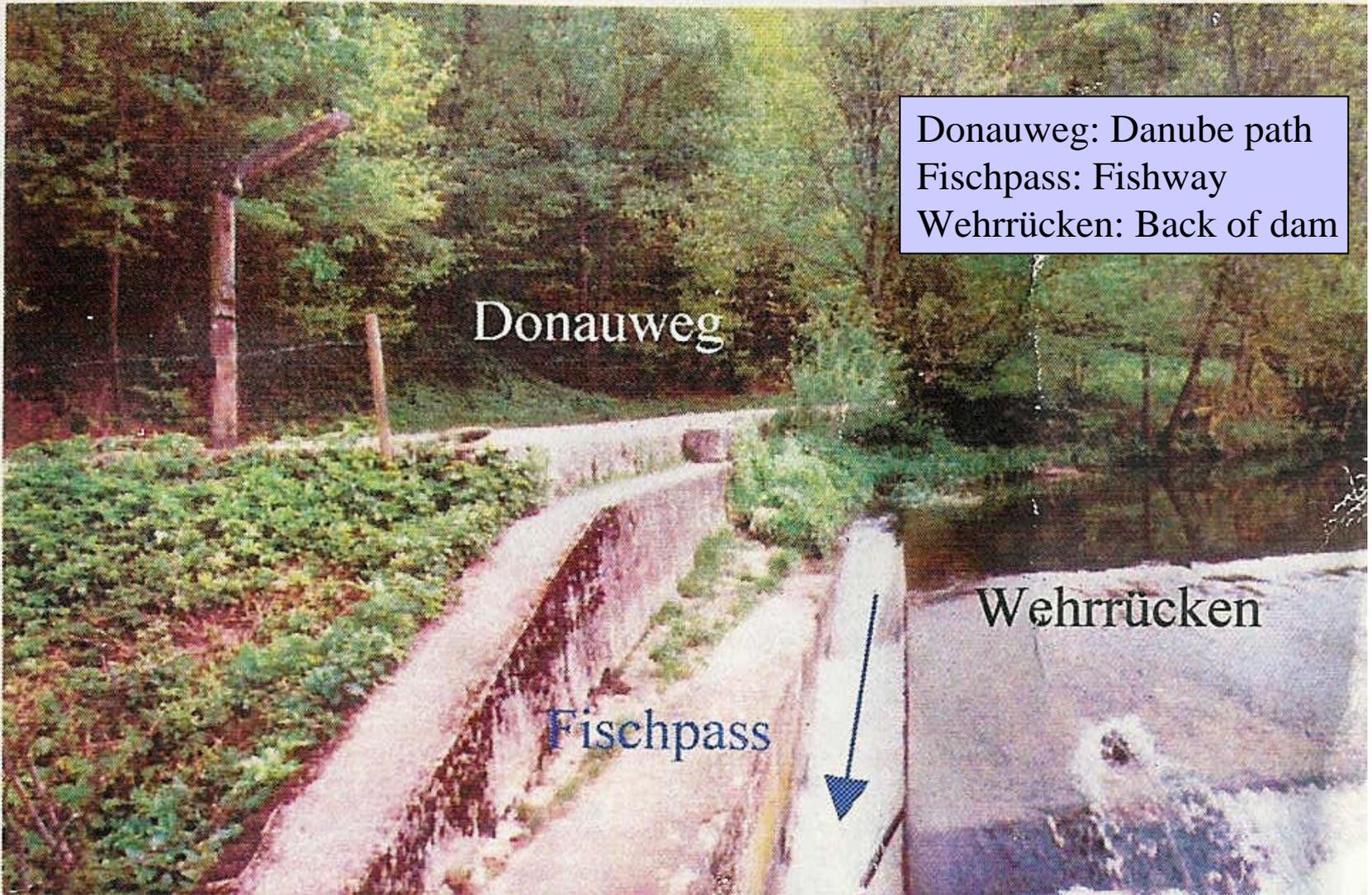
- Restoration of passage through weirs, *inter alia*
  - Conflict with power generation
- Land acquisition to enable water development
  - Conflict with agriculture





# Removal of a concrete weir





# Programmgewässer der Lachswiederansiedlung in Baden-Württemberg

-  Programmgewässer
-  durchwanderbare Rheinstaufe
-  eingeschränkt durchwanderbare Rheinstaufe
-  nicht durchwanderbare Rheinstaufe

## Problematik

→ Staustufen

→ Hohe Investitionen



# Gamsheim fish ladder



## Identification of investment requirements

- Expenditure for already implemented measures taken for buildings and kilometres
- Checking whether the quality targets are feasible with the investment (“cost-benefit ratio”)
- Extrapolation of state-wide investment needs (Premise: Only two-thirds of the measure avenues will be redesigned)

# State investment requirements...

---

- ...for ecological and structural measures: 300 million euros
  - until 2012/2015: 76 million euros per year
  - until 2021: 31 million euros per year
  - until 2027: 19 million euros per year

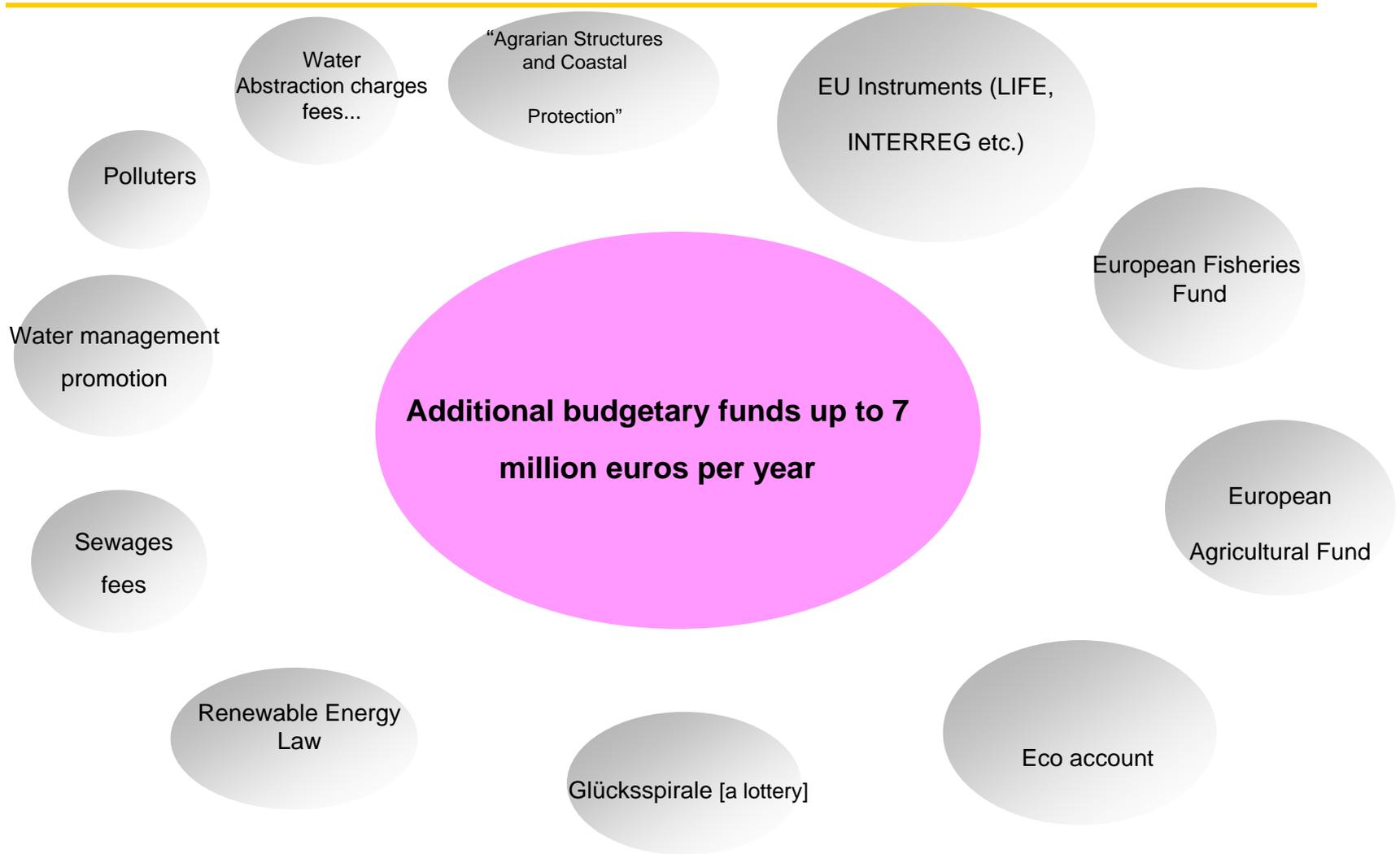
# Currently available resources...

---

...for hydroecological measures: 3-5 million euros per year

- 60 to 100 years to achieve the target good water condition
- Cost-cutting opportunities such as self-reinforcing water development (land acquisition, bank strips etc.) can be used
- other financing instruments can be exploited

# Possible financing instruments



# Conclusions

---

- Design for the implementation of measures needs to be developed quickly and
- Cost and financing plans need to be drawn up
- So that the policies for financing and possible consequences can be decided.