

An international Exchange of Experience

**Economic Analysis according to the WFD:
Status of Implementation**

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**„Linking the Economic Analysis with
the Analysis of the Pressure and
Impacts“**



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Linking the Economic Analysis with the Analysis of Pressures and Impacts

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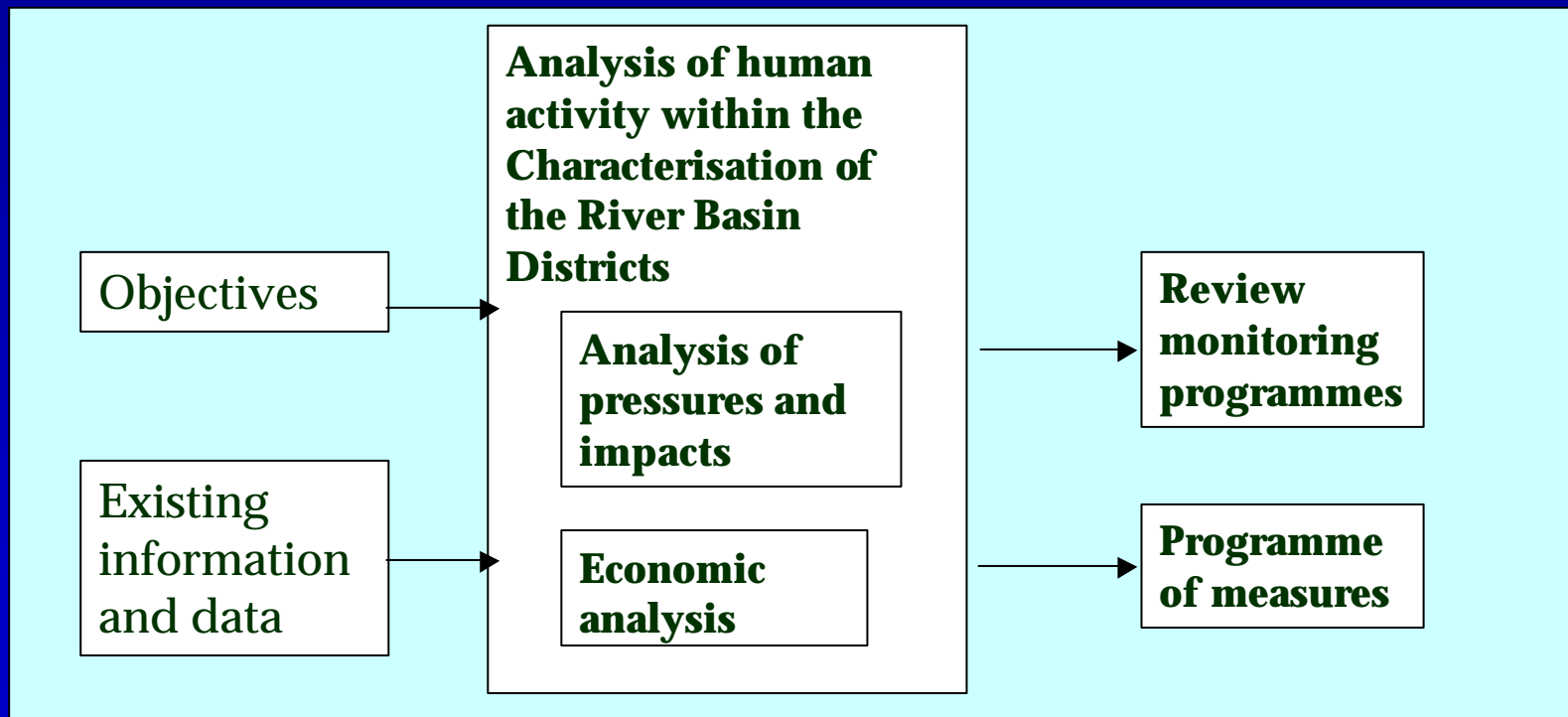
(German Federal Environmental Agency)

MOHAUPT, Berlin, 20.11.03

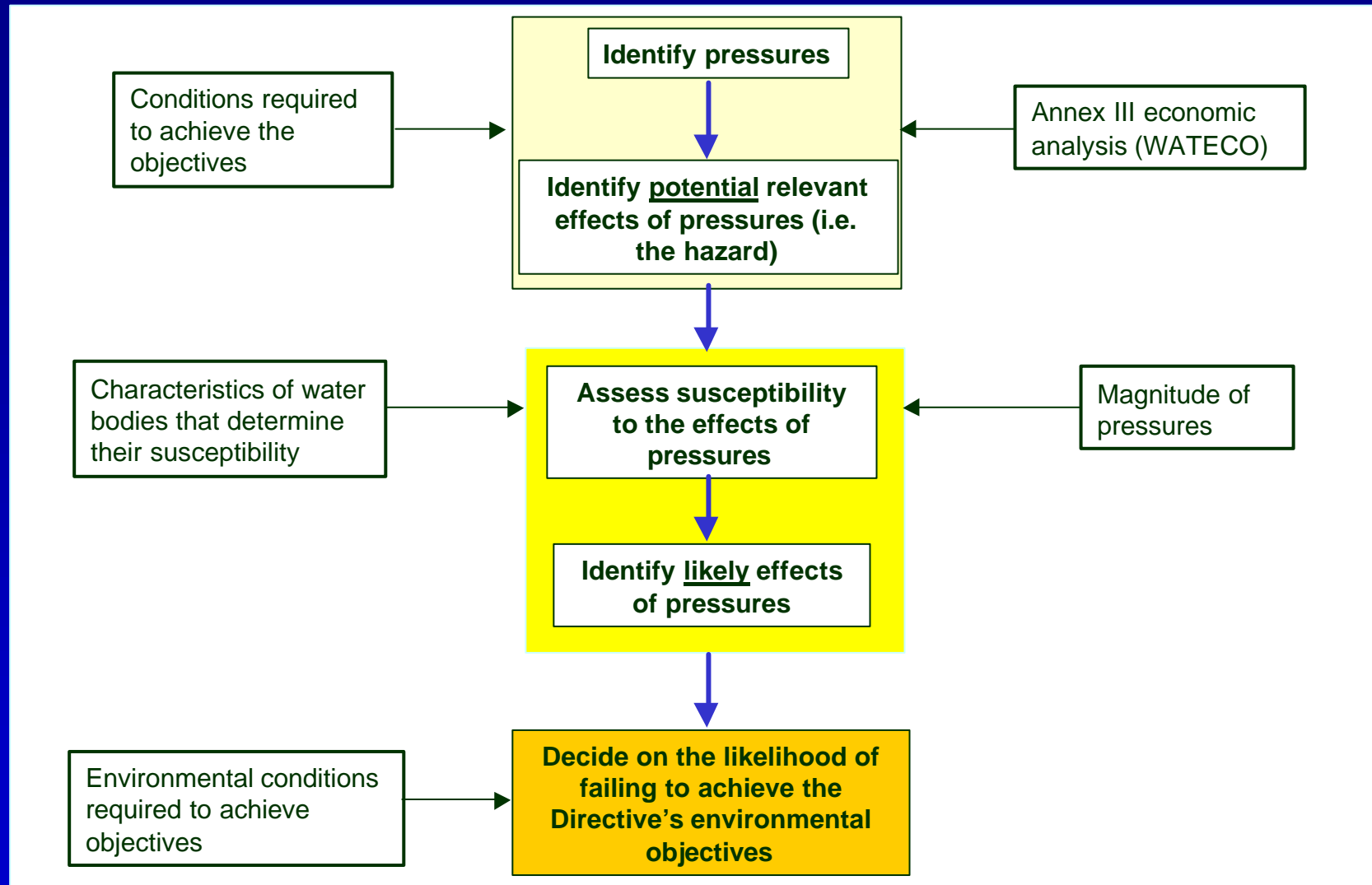


Role of IMPRESS and Economic Analysis within WFD Implementation

Elements of the planning process:



Key Elements of the IMPRESS-Analysis:



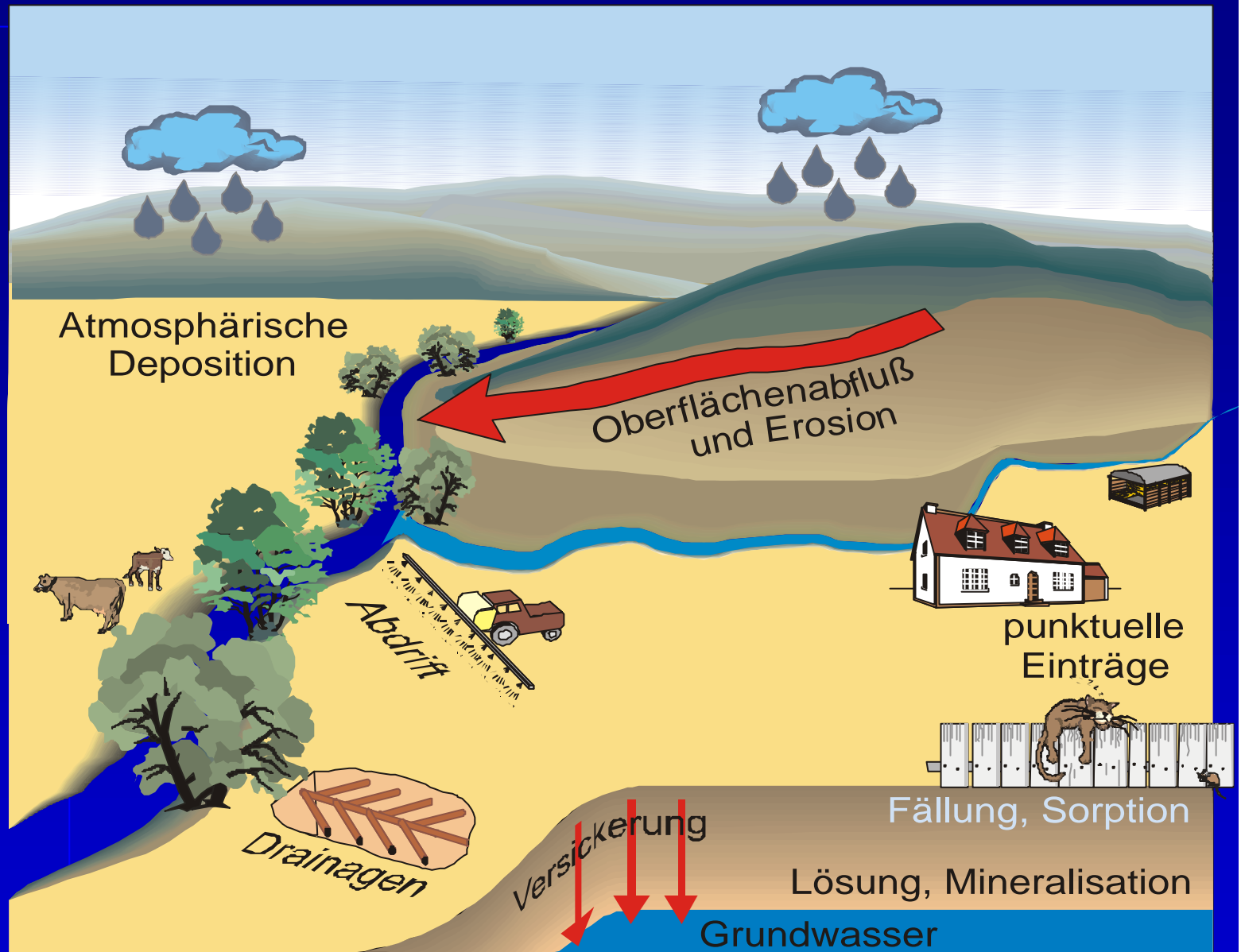
Tasks of the IMPRESS-Analysis

Identification of

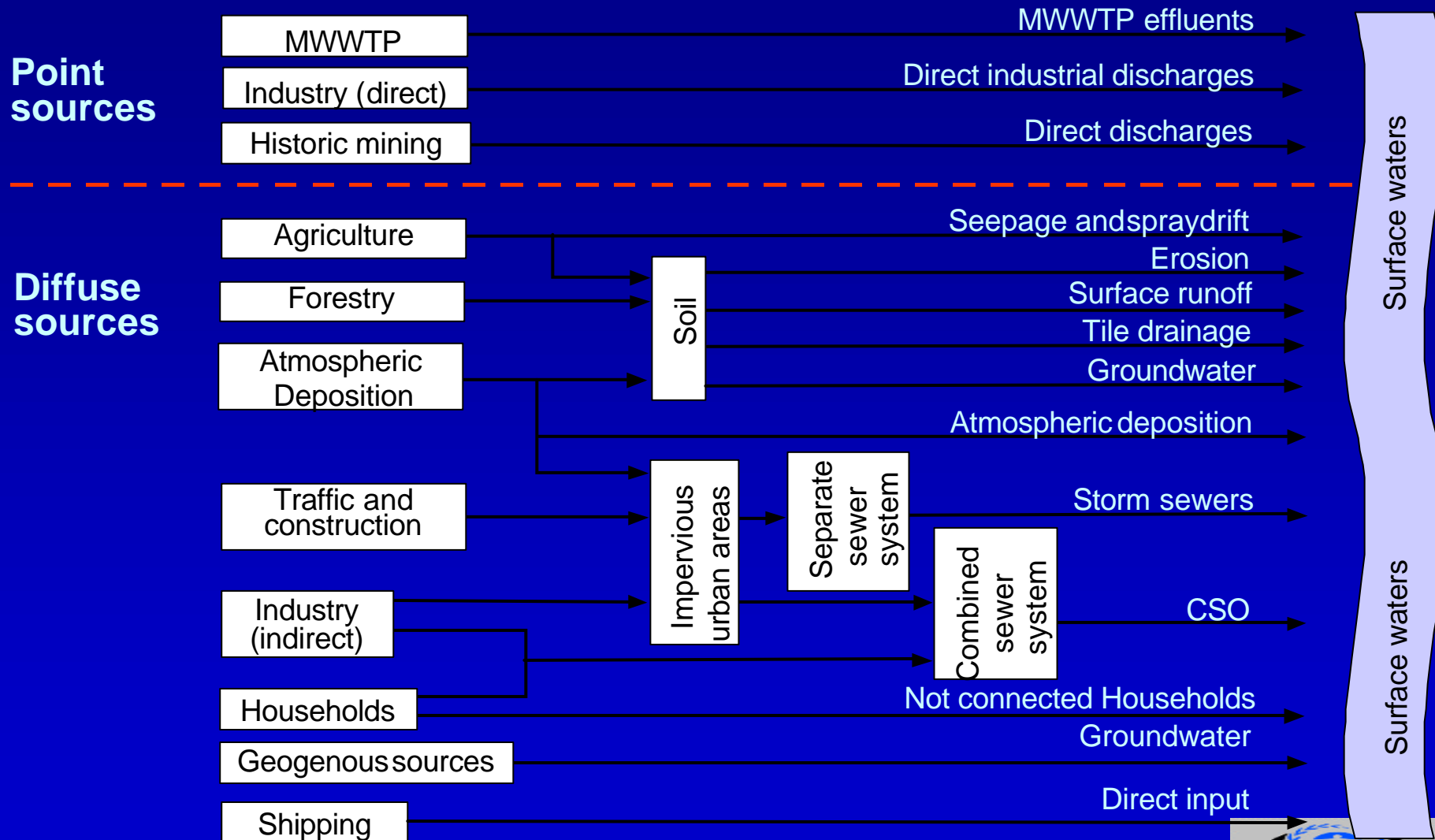
- **Water Bodies at Risk of Failing the Directive's Environmental Quality Objectives**
 - > **Immission Oriented Analysis**
- **Significant (= for the risk responsible) Pressures**

Water Pollution

(Bach,
Uni Giessen)



Pollution Analysis – Conceptual Approach



Surface Waters: Relevant Pollutants

Chemical Status (EU-wide Quality Objectives)

- Priority Substances (Annex X)
- Annex IX, Nitrate

Ecological Status

(Physicochem. Conditions: P, N, T, pH, O₂...)

- Specific (= regional relevant) Pollutants

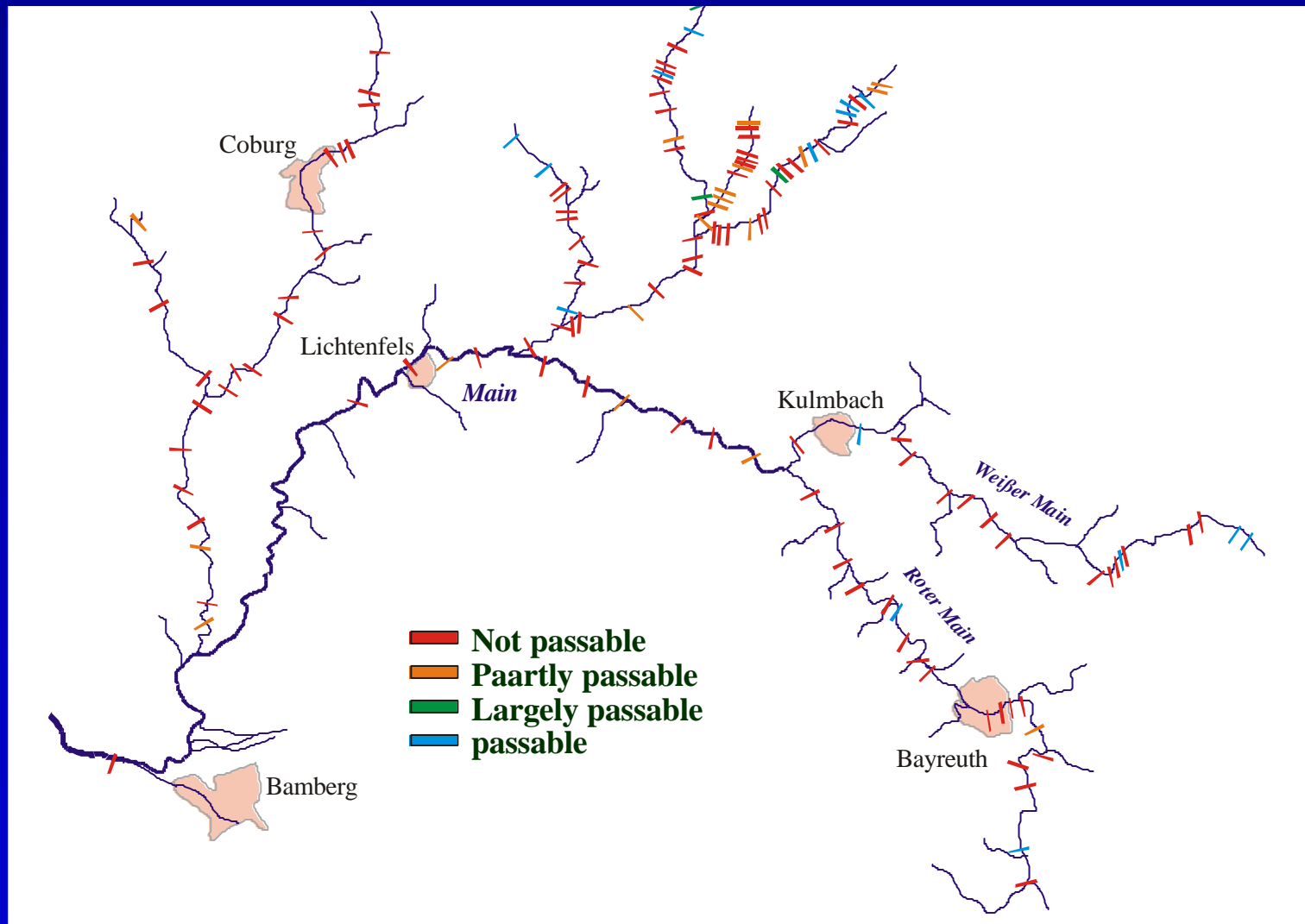
Main Uses Impacting Hydromorphology and Biology

Uses Impacts	Navi- gation	Flood pro- tection	Hydro- power	Agric. Fores. ation	Recre- ation	Water supply	Urband- sation
Disruption in river continuum & sediment transport	X	X	X	X	X	X	
Change in river profile	X	X	X	X			X
Detachment of ox-bow lakes/wetlands	X	X	X	X		X	X
Restriction/Loss of flood plains		X	X				X
Low/reduced flow			X	X		X	
Direct mechanical damage to fauna/flora	X		X		X		
Artificial discharge regime		X	X	X		X	
Change in groundwater level			X	X			X
Soil erosion/silting	X		X	X			X

Overview of the Main Physical Alterations

Water Uses Physical alterations	Navi- gation	Flood pro- tection	Hydro- power	Agric. Fores.	Recre- ation	Water supply	Urban- isation
Dams & weirs	X	X	X	X	X	X	
Channel maintenance, dredging, removal of material	X		X	X	X		
Shipping channels	X						
Channelisation, straightening	X	X	X	X		X	X
Bank reinforcement, fixation, embankments	X	X	X			X	X
Land drainage				X			X
Land claim				X			X
Creation of back waters through embankments	X				X		X

Dams and Weirs in the Upper Main Area and their Biological Continuity



Datenquelle: Bezirksfischereiverband Oberfranken e.V. (1998): Analyse der biologischen Durchgängigkeit des oberfränkischen Mains und seiner wichtigsten Nebenflüsse.

IMPRESS-Analysis: Reporting

- **Report analysis of risk - include assumptions and uncertainties**
- **Proposal:**
 - **GIS maps of water bodies at risk for each major pressure (Annex ii, 1.4)**

Links between Economic and IMPRESS Analysis in 2004?

- **Shared Use of Basic Pressure Data (e.g. List of Water Services: Abstractions; Discharges)**
- **Baseline Prediction:**
 - IMPRESS Considers
 - Plans Agreed under Legislation
 - Changes of Key Economic Factors
 - Monitoring Decision Based on Actual State
- **Is that realised everywhere?**
- **Other Links?**

Links between Economic and IMPRESS Results in Future?

Significant Pressures

Costs

Combination for

- **Definition of Objectives**
- **Design of Most Cost-Effective Sets of Measures to Achieve Objectives**

Answers to Questionnaire

- **Mostly: „Linked“, but No Details given**
- **Only Several Reliable Co-ordination Examples**
- **Expectations to Workshop**
 - Env., Res. & Disproportionate Costs
 - > Future Links
 - E: Integration of Economic Analysis into Hydrological and Quality Models
 - Links in 2004-Analysis Not Named as Big Issue