Economic analysis of water use and cost recovery

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Economic analysis

General aim

- Providing **socioeconomic information and assessments**, to support planning and decision making on effective measures for water protection (achieving water quality objectives).

Elements

1. Socioeconomic analysis of water use and users
2. Assessment of costs caused by the water use and their recovery
3. Socioeconomic assessment of additional measures

Results **economic analysis technical report** as deliverable of the WBWB project (in English).

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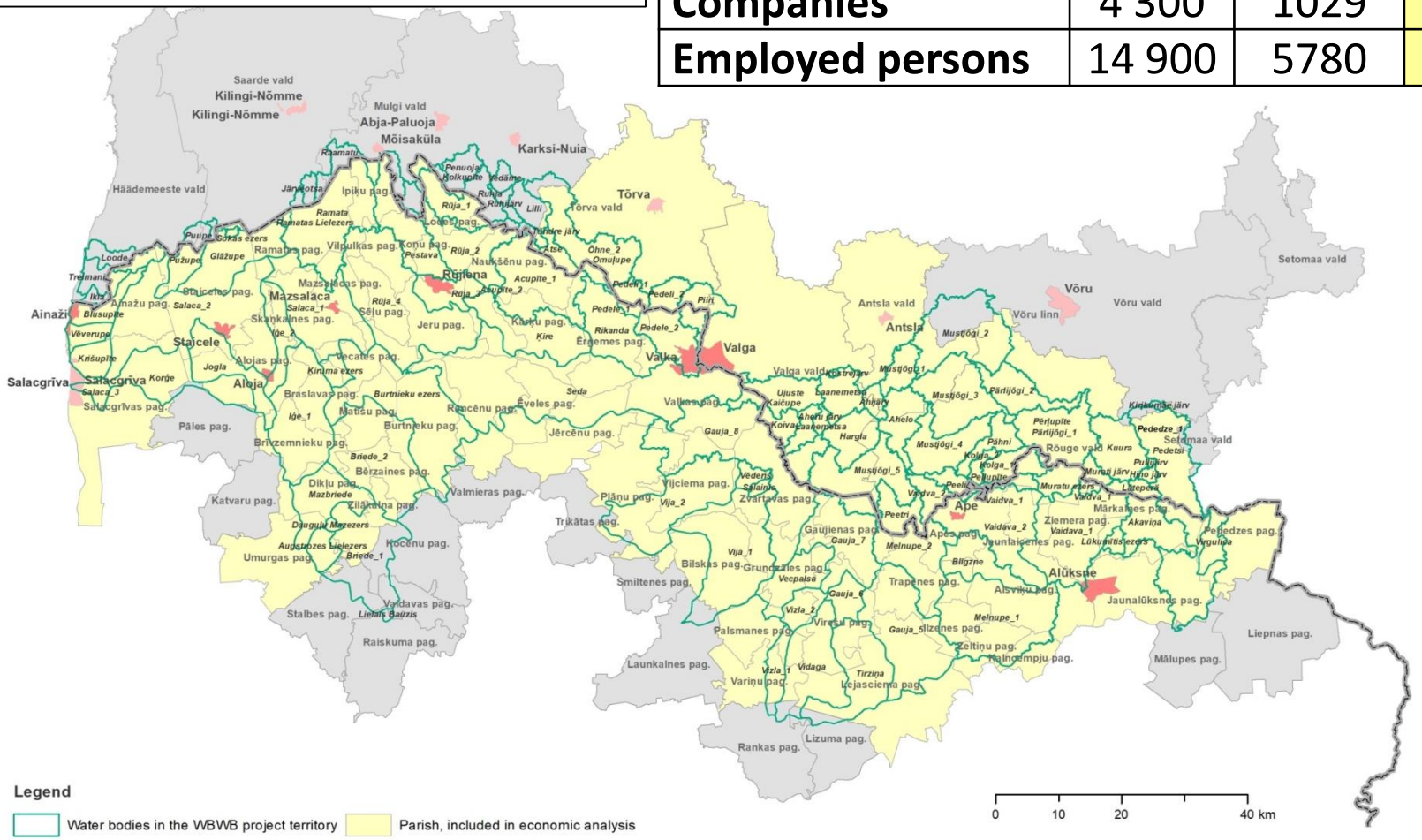
Area included in the Economic Analysis

LAT: 59 parishes and cities

EST: 2 counties

	LAT	EST	Total
Inhabitants	50 900	12 442	**63 339**
Companies	4 300	1029	**5 328**
Employed persons	14 900	5780	**20 701**



1. Significant water uses and users

Users	Water uses and their created pressures	No of WBs failing GES	
		LAT	EST
Agriculture	Diffuse nutrient pollution from AGR lands	13	-
	Hydro-morphological pressures from drainage	7	-
Forestry	Diffuse nutrient pollution from clear-cutting and drained FOR lands	5	-
	Hydro-morphological pressures from drainage	4	-
Various/no users	Hydro-morphological pressures from dams/ obstacles on rivers with various or no use	3 (8 significant obstacles)	4
Small HPPs	Hydro-morphological pressures from water use for electricity production	3 (due to 5 HPPs)	1 (due to 1 HPP)
No users (historical)	Accumulated (past) nutrient pollution in sediments	1 (Burtnieku lake)	1 (Köstrejärv)
Households, Industry, Other	Point source nutrient pollution from centralised sewage systems	1 (due to Alūksne)	1 (due to Köstrejärv)
Industry	Point source nutrient pollution from individual sewage systems	1 (due to 1 company)	-

1. Socioeconomic characterisation of water users

Socioeconomic significance of water use and users.

Information for other elements of the economic analysis (cost recovery, economic analysis of measures).

Water users	Quantitative socioeconomic indicators
Agriculture **Forestry**	1. Number of companies 2. Number of employed persons 3. Turnover, Profit
Users/owners of dams/obstacles	1. Number of obstacles 2. Number of owners (Characterisation of users)
Small HPPs	1. Number of small HPPs 2. Revenues from energy production
Households	1. Number of inhabitants served with centralised water services 2. Disposal income of inhabitants

2. Cost recovery of water use

«Water services» (WS) and other «significant water uses» (SWU)

Water uses	Applicable policy requirements
WS: all water uses which involve water abstraction, storage, impoundment and discharging of wastewaters	Cost recovery principle – covering financial costs, adequate contribution into covering created environmental costs
SWU: which are not WS but create «significant» pressures	PPP, adequate contribution into covering the created environmental costs

Cost recovery instruments and assessment

- **Assessment**: Costs, policy/pricing instruments for cost recovery, cost recovery level, socioeconomic impacts of cost recovery. WS – covering financial and environmental costs; SWU – environmental cost recovery.
- **Instruments**: Tariffs, NRT, other pricing instruments; implementation of (additional) measures and financing their costs.

2. «Water services» (WS) and «significant water uses» (SWU)

Water uses	LAT	EST
CENTRALISED sewage services	WS (1)	WS (1)
Individual sewage discharge by HOUSEHOLDS	WS (0)	WS (0)
Individual wastewater discharge by AGRICULTURE	WS (0)	WS (0)
Individual water (self) abstraction and wastewater discharging by INDUSTRY	WS (1)	WS (0)
Individual excess water discharging related to MINING	WS (0)	–
Individual wastewater discharge by WASTE management (disposal) sites	WS (0)	–
Water use for electricity production in small HPPs (involving water storage)	WS (3)	SWU (1)
Diffuse nutrient pollution run-off from AGRICULTURE	SWU (13)	–
Diffuse nutrient pollution run-off from FORESTRY	SWU (5)	–
Hydro-morphological pressures from AGR drainage	SWU (7)	–
Hydro-morphological pressures from FOR drainage	SWU (4)	–
Hydro-morphological pressures from dams/obstacles with various or no uses	SWU (3)	SWU (4)
Accumulated (past) nutrient pollution in sediments	SWU (1)	SWU (1)

Cost recovery of centralised «water services»

	Financial cost (FC) recovery	Environmental cost (EC) recovery	Cost recovery level
LAT	FC recovery level **78-101 %** (depending on settlement). 101 % for Alūksne city.	Create EC in **1 WB** (due to Alūksnes city). **NRT** payment around 1200 EUR/year	**FC 78-101 %** **EC (1 WB) covered partly**
EST	FC recovery level **87 %** for AS Valga Vesi	Create EC in **1 WB** (due to Köstrejärv). **NRT** payment around 18 000 EUR/year	**FC 87 %** **EC (1 WB) covered partly-fully**

- Socioeconomic impacts of CR: Costs for the centralised water services on average < 3 % of households' disposal income, but above 3 % for low income households' groups.
- **Recommendations**:
  - **FC**: Possibility to increase the water tariffs needs to be evaluated individually by settlements in light of the affordability.
  - **EC**: The cost recovery problem is local – local solutions would be preferred => implementing additional measures and financing their costs (improving WW treatment, measures by users).

Cost recovery of individual «water services»

Individual " water services" causing failure of GES – on the Latvian part only.

„Water service"	Financial cost (FC) recovery	Environmental cost (EC) recovery	Cost recovery level
Individual wastewater discharging by INDUSTRY	FC are covered	Create EC in **1 WB**(«Aloja Starkelsen»). **NRT** payment around 270 EUR/year	**FC 100 % EC (1 WB) covered partly**
Water use for electricity production in small HPPs	FC are covered (but subsidies – covered by electricity users)	Create EC in **3 WBs** (5 HPPs) – **NRT** payment around 25 000 EUR/year from all 10 HPPs in project area (50 % from 5 HPPs creating significant pressure)	**FC 100 % EC (3 WBs) covered partly**

- **Recommendations** :
  - **EC**: The cost recovery problem is local – local solutions would be preferred => implementing additional measures and financing their costs.

Environmental cost recovery of «significant water uses»

SWU	Environmental cost (EC) recovery	
	LAT	EST
Diffuse nutrient pollution from AGRICULTURE and FORESTRY	EC not covered (13 and 5 WBs)	
Hydro-morphological pressures from drainage in AGRICULTURE and FORESTRY	EC not covered (7 and 4 WBs)	
Hydro-morphological pressures from dams/obstacles with various or no use	EC not covered (3 WBs)	EC not covered (4 WB)
Water use for electricity production in small HPPs	-	EC not covered (1 WB)
Accumulated (past) nutrient pollution in sediments	EC not covered (1 WB)	EC not covered (1 WB)

- No current pricing/policy instruments for covering EC (only existing measures implemented so far). Local solutions would be more appropriate.
- **Recommendations**: Proposed instruments for EC recovery – implementation of additional measures and financing their costs.