

Optimisation of water systems in Ukraine

Study on regionalisation of water services

*Prepared for
European Union Water Initiative Eastern Europe, Caucasus and Central
Asia (EUWI EECCA) 15th Working Group meeting*

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- 1. The objective and scope of current work**
- 2. Water utilities included in analysis**
- 3. Small water companies – status and challenges**
- 4. Regionalisation – initial results of regional company modelling**

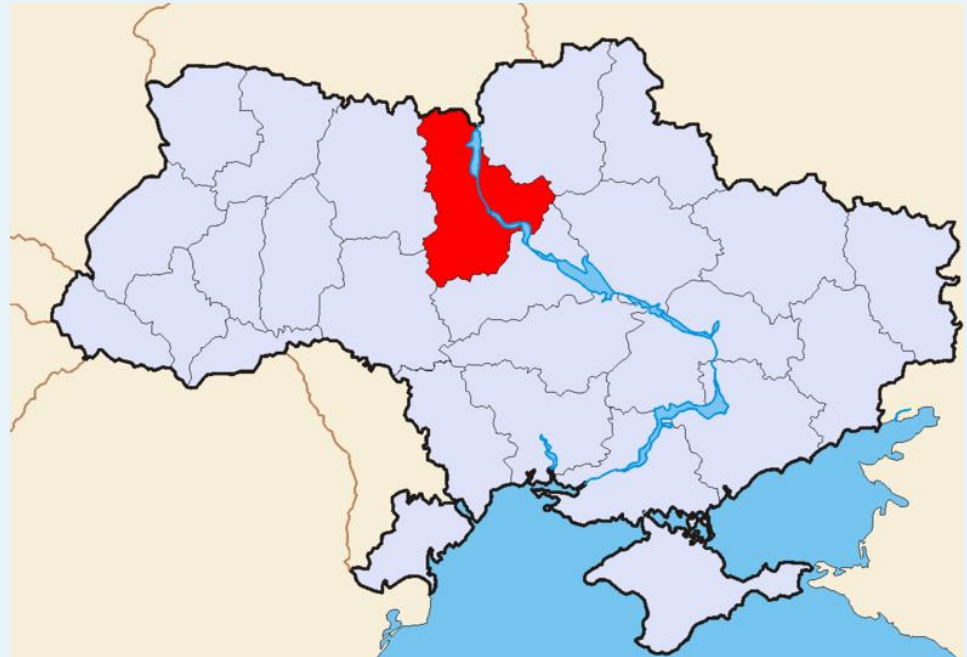
- **Small water systems face numerous challenges in their attempt to provide quality, affordable and efficient services to population**
- **The key criticisms for small water systems include:**
 - ✓ Poor operational efficiency and high unit costs
 - ✓ Limited access to investment capital
 - ✓ Sub-optimal utilisation of water resources
- **Consolidation (regionalisation) is frequently considered as logical approach in trying to resolve the problem**

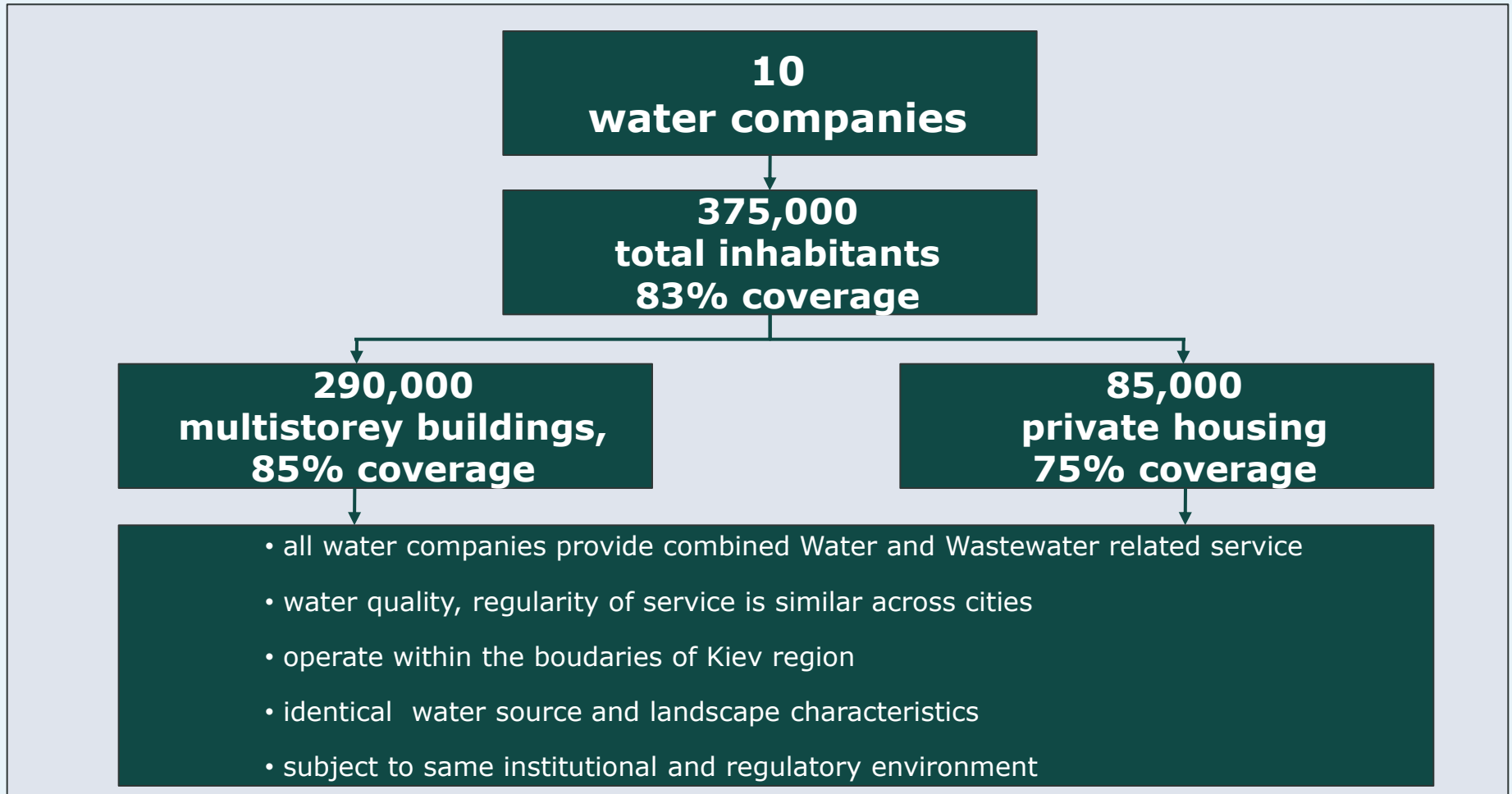
- Quantitatively assess individual water companies vis-a-vis Regional Water Company
- Provide concrete implications for potential effects of regionalisation in terms of costs, tariff implications
- Outline the key priority areas for Regional Authorities if going for regionalisation

- Initially 2 regions:
 - Autonomous Republic of Crimea
 - Cherkassy oblast
- Preliminary meetings with local administrations has been carried out and questionnaires distributed for data collection
- Data collection – proved to be a major CHALLENGE
- After number of attempts and delays Crimea region has been replaced by Kiev oblast
- Results from analysis in Kiev oblast are presented today

Kiev oblast

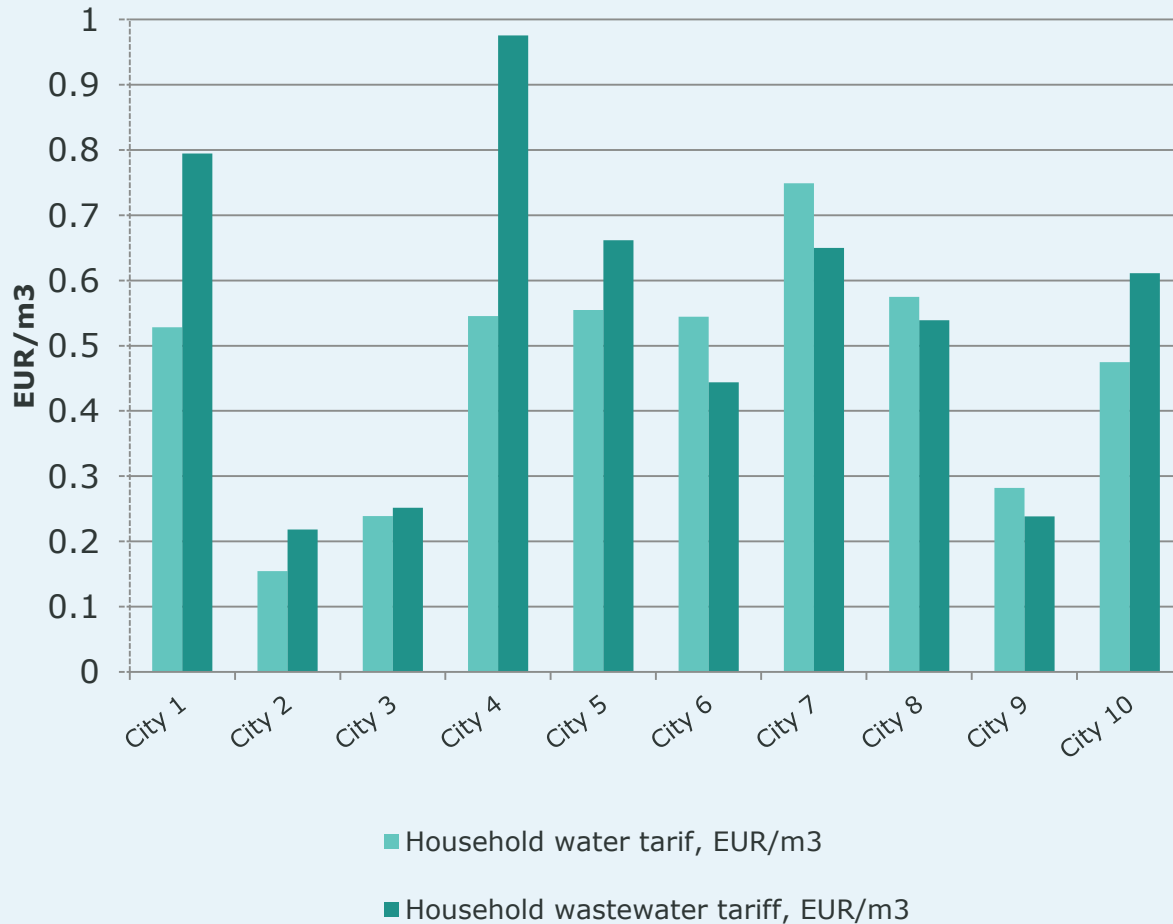
- North-central region of Ukraine
- One of 24 oblasts in Ukraine (3,7% of population and 4,5% of territory)
- Split into two halves by river Dnipro
- Geographically uniform
 - small mountains and hills only on the banks of Dnipro
 - 177 rivers intersecting in the region (Dnipro, Pripjat, Desna)
- 25 cities and more than 1,100 rural settlement with population of 1,7 mln
- Population rather equally distributed across Oblast with average density of 65 prs/km²
- Every city is operated with its individual water and wastewater company
- Oblast is governed by the Kiev Oblast Rada



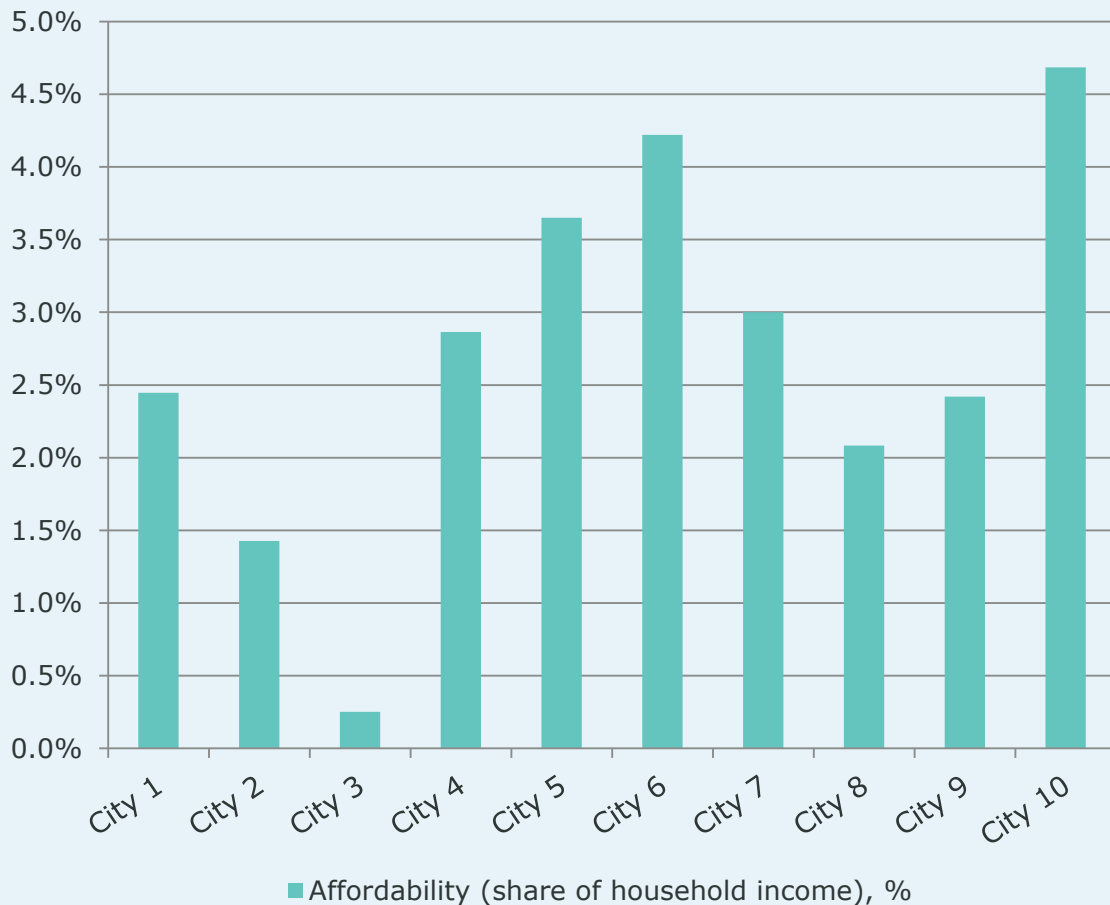


Key characteristics/issues

- Year-to-year financial result - **negative**
- Physical water losses - **35% and more**
- Energy consumption high - **1kWh/m3 of abstracted water**
- Total direct O&M cost - **5 UAH/m3 (0,46 EUR/m3)** of abstracted water
- Employee efficiency - **1 employee/200 connected inhabitants**
- Infrastructure – almost **50% fully depreciated**
- Maintenance works - **minimal**
- None of the companies in the sample is able to finance serious investment programme – hardly cover O&M expenses
- Almost none of the companies in the sample is able to attract serious external credit financing for investments:
 - poor revenue basis
 - small size versus high transaction costs



- Within boundaries of the same region on a short distance from each other, tariff in cities, which are frequently almost of the same size, may differ as much as 3-5 times
- Rarely has anything to do with cost – political power and influence

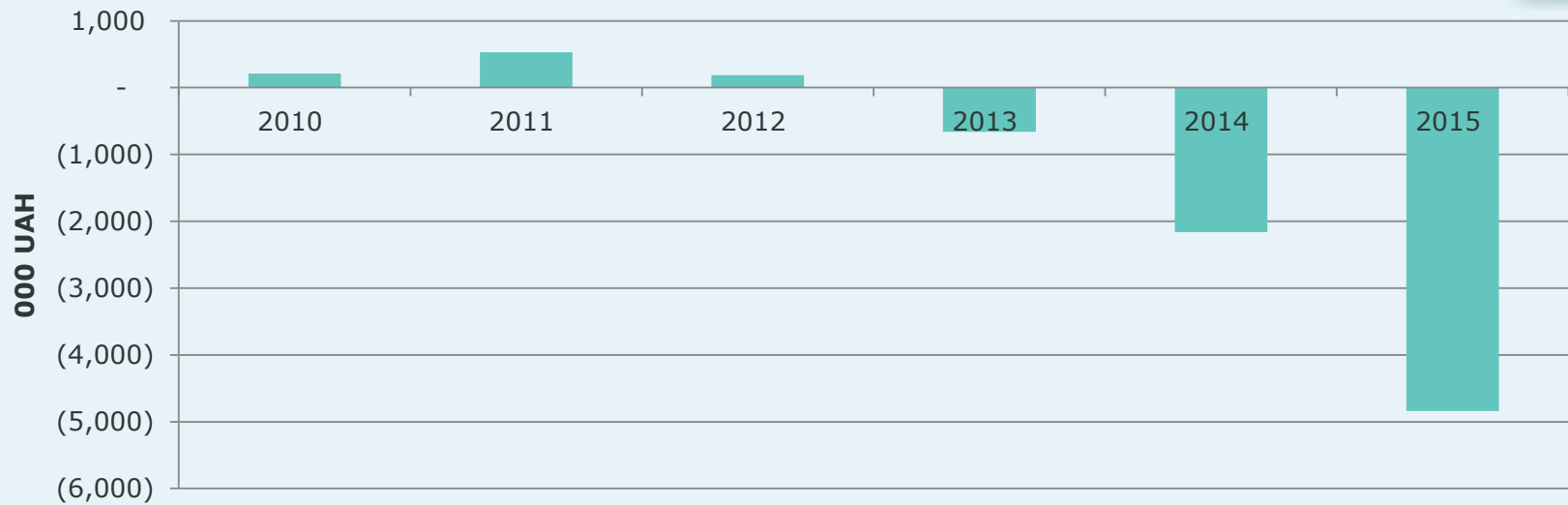


- Share of income paid for water and sanitation services also differs across individual water companies
- Affordability data are shown only for households with installed water meters

Summary

- Each water company develops its independent solutions, which are of "immediate problem solving" nature and short term oriented
- Not capable to address fundamental issues - infrastructure, water resource management, financial planning, operational efficiency
- Add hoc "save the day" approach results in:
 - highly differentiated tariff structure for similarly poor quality of service
 - vicious cycle – increasing costs, upward pressure on tariffs, lower service levels

Financial positions – over time

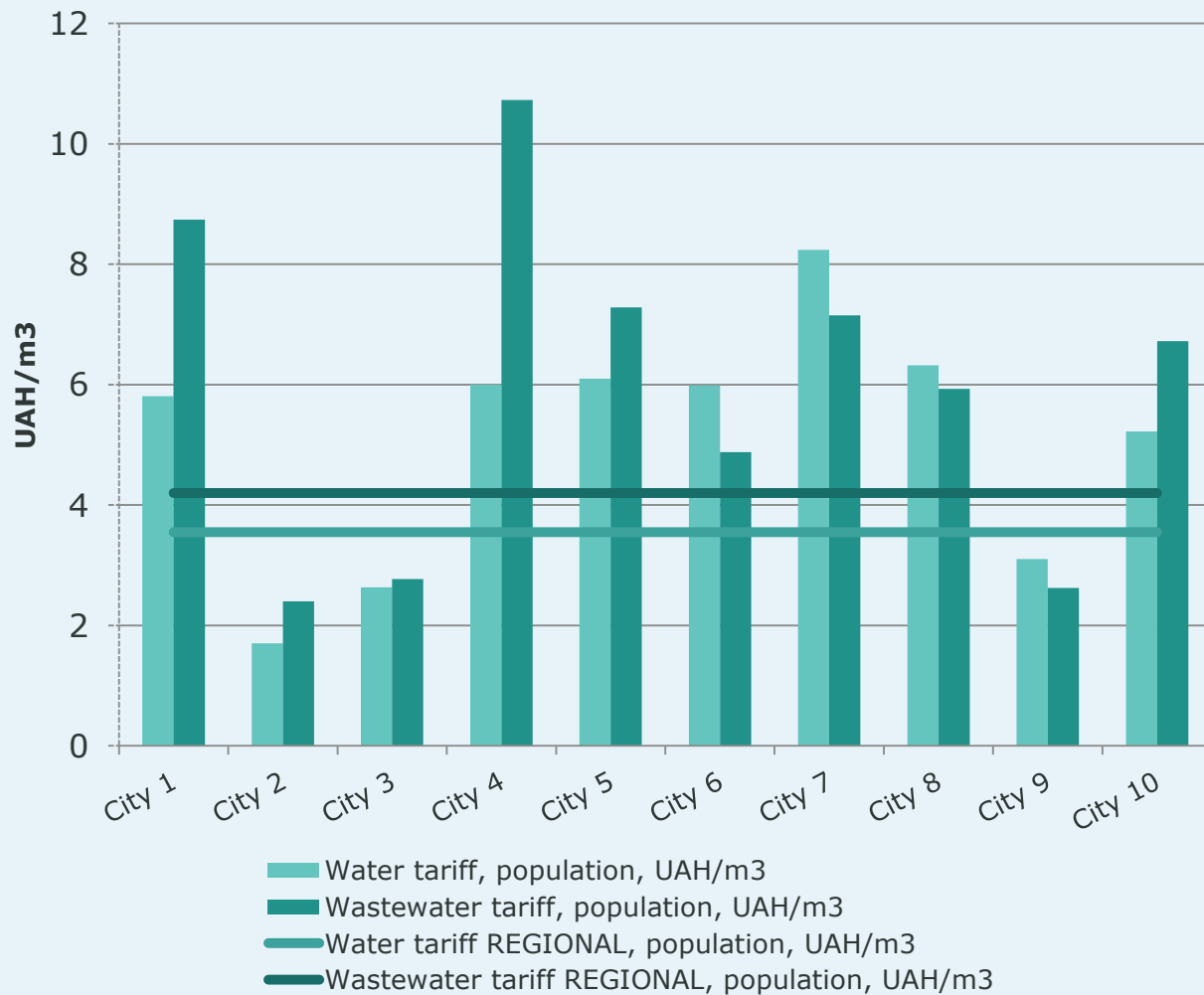


- Required tariffs increase from current levels in order to sustain water companies at the cost recovery level (including basic maintenance):

- **13-15% annually, 2012-2015**
- **10-12% annually, after 2015**

Regional water company

- Assumed:
 - based on 10 water companies in the sample
 - serves all customers in the service zone of 10 companies
 - technical and financial data of Regional Company derived either as total sum (of individual companies (water abstraction, consumption, losses)
 - Tariffs, collection rate, household incomes modeled as weighted average of individual water companies
 - Regionalisation implies "unified management and governance" of water company
 - administration, tariff setting, planning, monitoring
 - financing, accounting, reporting
 - Former water companies remain as individual operational units governed from a central regional body



- Stable uniform tariff for the regional company

Pro-active regional company

- Investment programme ,operational safety - **400 mln UAH (36 mln EUR)**
- Capable of accessing credit market (mix of credit/grant funds)
- Implementation period 3 years, 2012-2014
- Estimated :
 - Cost optimisation (conservative **1 staff/350 connected** population)
 - Energy saving **15-20%** of current
 - Water loss (physical) reduction – **30%**
- Does not include many other benefits that can be quantified as having material impact
 - increased purchasing power and therefore lower cost of material
 - cost sharing between high and low cost towns – equalisation of tariffs (higher collection)
 - more effective approach to environmental protection and enforcement of standards within single entity (lower environmental penalties)

- Full economic and financial model for regional company has been developed for the period of 15 years going forward

	Tariff increase	Impact	Affordability
Individual water companies	13-15% (10-12%)	Preserve status quo	0,3%-4,8%
Regional water companies	11-13% (9-11%)	Major infrastructure and cost structure optimisation,	0,025

- In the context of Ukraine, regionalisation has more **urgent meaning**
 - preventing water sector from collapse and serious service deterioration
- Operational inefficiencies, wasteful resource utilisation, poor condition of assets are **widespread challenges** for almost every water company
- Left alone with such problems, small municipalities struggle in finding "their own solution to the problem", which results in highly differentiated market for the same product in the same region
- Regionalisation can work, but it has to be well planned and systematically implemented
 - short term: cost optimisation plans
 - mid-term: capital investment planning and implementation
 - mid, long-term: optimisation of water resource use

Thank you!