Urban Water Footprint

CENTRAL EUROPE COOPERATING FOR SUCCESS.

EUROPEAN UNION EUROPEAN REGIONAL DEVELOPMENT FUND

Project no. 4CE439P3

URBAN_WFTP

Introduction of Water Footprint (WFTP) Approach in Urban Area to Monitor, Evaluate and Improve the Water Use

WP4.5.1

SWOT Analysis Common Index

Appendix No 4

SWOT Analysis Report (WP4.5.2)

Please tick a box, according to your region

Wroclaw ☒

Vicenza ☐

Innsbruck ☐

Lead contractor for deliverable *WP 4.5.1*: alpS

Start date of project: 1 November 2012 **Duration: 25 months**

Submission date: April 2014

Guidance

1. Please collect the strengths and weaknesses, identified in step 2, using Appendix 2, and list them in appropriate sections “Strengths” or “Weaknesses” in the form of the successive page.
2. Please collect the opportunities and threats, identified in step 3, using Appendix 3, and list them in appropriate sections “Opportunities” or “Threats” in the form of the successive page.

Give name of Lab: Wroclaw Urban Lab

Strengths

- The green water footprint
- The [high/low] impact of industries with high water consumption in terms of increase of emigration
- First level modeling (Model A)
- Third level modeling (Model C)

Weaknesses

- The balance/handling of conflicts of interest
- The technological functionality of the water supply networks
- The functionality of water distribution and consumption in buildings
- The capacity of own emergency backup systems for water supply and waste water
- Low awareness of inhabitants and organizations of their own real (direct) water consumption profile
- Low awareness of inhabitants and organizations of their own virtual (indirect) water consumption profile
- Low awareness of inhabitants and organizations of their own sewage water generation profile
- The measuring system for water distribution
- The measuring system for the blue water footprint
- The measuring system for the grey water footprint
- The evaluation system for water distribution
- The evaluation system for the blue water footprint
- The evaluation system for the grey water footprint
- The monitoring system for water distribution
- The monitoring system for the blue water footprint

- The monitoring system for the grey water footprint
- The lab's awareness of the decisive target groups and stakeholders
- The lab's knowledge of addressing and influencing the decisive target groups and stakeholders
- The lab's personnel resources
- The lab's financial resources
- The lab's data resources
- The lab's public visibility

Opportunities

- Shaping regulations
- Introducing requirements
- Defining development strategies
- Long-term planning
- Subsidy for building rainwater tanks
- Charges for discharging rainwater into sewage system
- Obligation to design green roofs in new buildings
- High environmental charges
- Setting price based on economic account
- Implementation of market principles
- Economic development plans of companies
- Decentralization (more than one operator)
- Changes on the labour market
- Increase of education level
- Increase of ecological awareness
- Changes in social mentality
- New buildings
- Water harvesting

- Choosing foodstuffs based on real needs and quality
- Increase of household income
- Implementation of water saving facilities in households
- Metering and monitoring of water use
- Progress in technological development water and sewage treatment
- Introducing BAT and LEED
- Separation of rainwater from sewage system
- Exchange of knowledge on environment
- Better weather forecasting
- Implementation of GIS techniques
- Improvement of water quality
- Privatization of water and sewage companies
- Business management
- Implementation of IT in management
- Import of new technology

Threats

- Changeability of low
- Influence of municipal government on operation of water and sewage companies
- Lobbying
- No encouragement (regulation) for water saving
- Instability of interest rates
- Increase of materials and services cost
- Increase of cost related to complexity of management system
- Stealing water
- Migration in search of work
- Falling birth rate

- Change in population age
- Increase of population density in the city centre
- Lifelong habits
- Increase of consumption
- Low awareness about water resources
- High unemployment rate
- High cost of new technologies
- Risk of new technology implementation
- Difficulties in processing large data sets
- Data confidentiality
- Old infrastructure
- Climate change (droughts, floods)
- Ground sealing (increase of impervious area)
- Changes in local water balance
- Use of surface water for consumption
- Increase of industrial sewage
- Insufficient exchange of experience
- Regional uniqueness
- Higher water demand
- New business centres in the city centre

Comments

Please comment/elaborate on the points listed above.

The development of models A and C is considered as the strength of the project. The models allow assessment of green water footprint which is the strength of the Wroclaw region. However the models would be even more useful if they could consider the impact of changes in the structure of water consumption arising from the seasonal and long-term migration, which is particularly evident in large urban areas and settlements with a dominant tourist function.

The weak point of our region is the existence of many conflicts of interest between the various operators and local governments affecting the operation and development of programs related with strategies for development of water and sewage systems. Low public awareness about means to rationalize the management, conservation and distribution of water resources, including knowledge of the methods and purposes in calculating virtual water footprint is also considered as weakness. Additional limitations are caused by underdevelopment of the monitoring systems, archiving data and inadequate methods of analysis.

As the weakness is also taken the lack of laboratories, centres of dissemination of knowledge about the water footprint among state and local administration, and among engineers exploiting water supply and sewerage systems. There are no material, financial and human resources to enable the establishment of such centres.

The potential of Water Footprint widespread implementation is mainly related to the introduction, into the EU law and Member States regulations, the necessity for water footprint calculations when preparing future trends and development strategies of water management at regional and local level. This applies also to changes in rainwater use in urban areas based on economic accounting and minimizing the impact on the environment.

The opportunity of implementing water footprint as a tool to diagnose the conditions of the water management should be subject to the evolution of decentralization and ultimately should be used at the enterprise and local administration level. The use of water footprint to improve water management will be possible due to the increase in level of education,

ecological awareness, wealth of societies, technological progress including wide spreading of monitoring, implementing GIS techniques and development of exploring large data sets.

The biggest threats for the implementation of water footprint accounting are caused by a lack and variability of legislation in individual countries as well as by occurrence of lobbying favouring selected technologies and technical solutions. Very important are also external factors such as economic conditions of the investment, demographic conditions, unemployment, population habits to standard procedures and low awareness about the influence of water management on the material development of regions. As threat is also recognized the lack of exchange of experiences on creating plans and strategies for investment management affecting water balance, which depends largely on the local conditions.

Interpretation

Please interpret your results, in terms of what future improvements would be useful and reasonable.

Based on the analysis of obtained results it can be concluded that the success of the implementation of procedures for calculating the water footprint depends mainly on the introducing of new regulations, which should require the calculation of the water footprint at the stage of preparation the development and modernization strategy related to the quality and quantity of water resources. This should be done parallel to the comparative analysis of technical solutions and economic conditions. It is also necessary to standardize the procedures of data gathering during monitoring phase and data processing for the purpose of calculating the water footprint . The biggest chance for application of water footprint is perceived in comparative analysis of water retention loss in urban areas , which is the result of surface sealing. Water footprint would also allow comparison of technical solutions applied in different EU regions with variable environmental, economic and cultural conditions.