

## D.T3.1.5

# COMPREHENSIVE FUA-LEVEL STATUS QUO STUDIES

---

Split FUA

03 2020

---





# 1. Status Quo analysis

Analysing the FUA level self-assessment on background conditions related to circular water use (D.T3.1.3) and the local public perception assessments (D.T3.1.4) done in the Split FUA, we highlight the following main results.

## 1.1. Self-assessment on background conditions related to circular water use

For each of the main topics of the FUA-Level status Quo assessment:

1. Climate, Environment and population
2. Water resources
3. Water infrastructures
4. Water consumption
5. Climate change
6. Rules, laws and good practices

we summarise the results highlighting challenges and strengths.

### 1. Climate, Environment and population

- Challenges:

- Seasonal population influx due to tourism activities
- Reduced percentage of green spaces
- A high percentage of sealed soil

- Strengths:

- Jadro karstic water spring as the main water supply

### 2. Water resources

- Challenges:

- High vulnerability of karstic recharged area of Jadro water spring
- Occasional increase of turbidity values of Jadro spring water
- Significant oscillation in the average monthly Jadro spring water discharge (especially between summer and winter months).

- Strengths:

- Good Jadro spring water quality according to its physical and chemical indicators
- High-quality bathing water

### 3. Water infrastructure

- Challenges:

- Significant water loss in the water-supply network
- Lack of a dual system for the water-supply network
- Non-existence of infrastructure for rainwater retention and re-use
- Non-existence of water purification plant on Jadro water spring



- Seasonal load on infrastructure due to tourism activities
- Non-existence of infrastructure for wastewater recycling and reuse

■ Strengths:

- High tap water quality most time of the year
- Developed plans for reconstruction and expansion of water infrastructure
- Installation of a new water disinfection technology

#### 4. Water consumption

■ Challenges

- No available data on bottled water consumption
- A lack of CE solutions in water consumption (water re-use)

■ Strengths:

- Existing initiatives for reducing the consumption of bottled water
- Centralised water management (single water utility)

#### 5. Climate change

■ Challenges:

- Rising temperatures due to climate change
- Extreme hydrological conditions seen through droughts and flash floods
- Climate change impact on the economy, especially tourism.

■ Strengths:

- High resilience of Jadro water spring on different climate change scenarios

#### 6. Rules, laws and good practices

■ Challenges:

- Lack of legislation on greywater and rainwater in Croatia
- No restrictions in water use

■ Strengths:

- Implementation of the integral major project (agglomeration Split-Solin)
- Organized conferences on energy & water efficiency
- Different research initiatives on energy & water efficiency.



## 1.2. Water efficiency and reuse related public perception assessments

Analysing of the FUA level water efficiency and reuse related public perception assessments (D.T3.1.4), we summarise the results highlighting challenges and strengths.

### 7. Public perception assessment

- Challenges:
  - A significant number of responders do not collect water after washing fruits and vegetables and use it for watering plants, neither they water the garden/balcony flowers with rainwater.
  - A significant rate of households do not own water-saving facilities, the responders are not even aware of whether they have them in their households.
  - A high rate of responders had no information about the water footprint of the production processes.
  - Almost half of the responders are not aware of their annual costs for water supply.
  - A significant number of responders are not aware of the high water loss level in the water-supply network.
  - A lot of the responders did not know the possibility of water reuse at their homes.
  - The responders are most afraid of water supply problems when asked about the effects of climate change.
  - Most of the responders consider that informational campaigns are useful.
- Strengths:
  - A significant number of responders turn off the water tap while shaving or brushing their teeth, more than half makes sure that the water installations at their home are tightly shut (e.g. tube, taps) and almost every responder drinks tap water.
  - A high rate of responders, when choosing between tap or bottled water, marked the following as being the most important: reducing plastic consumption and bottle transport
  - A significant number of responders are open to changing their habits in order to reduce their environmental impact.
  - Environmental reasons motivate the responders more than economic reasons in regards to saving water.
  - A significant number of responders consider that fixing leaks in the water-supply network should be a priority in Split FUA.
  - Almost all of the responders are aware of some of the possibilities for rainwater use (excluding drinking) and they think that the related rainwater use installations should be more widespread.
  - A very high rate of responders considers that installations related to greywater reuse should be more widespread.
  - A significant number of responders are familiar with green roofs and almost all of the responders think that green roofs should be more widespread.



### 1.3. Conclusions

Speaking of climate, environment and population, it is important to highlight some of the key challenges such as a high vulnerability of Jadro spring to different pollution sources and a reduced percentage of green spaces in Split FUA. Furthermore, a key strength is the Jadro water spring that exhibits high resilience in all climate change scenarios. Concerning water resources in general, it is important to point out the key challenge of the high vulnerability of karstic recharged area of the Jadro water spring and significant oscillation in the average monthly Jadro spring water discharge. However, concerning water resources in general, the good quality of Jadro spring water is a key strength. Significant water loss in the water-supply network and the lack-of a purification plant on Jadro water spring are the key challenges regarding water infrastructure. Furthermore, the developed plans for reconstruction and expansion of water infrastructure, as well as the installation of a new water disinfection technology demonstrate a key strength regarding water infrastructure development. Moreover, the lack of CE solutions is a key challenge facing water consumption, while the key strength is centralised water management. In relation to climate change, it is important to highlight challenges such as extreme hydrological conditions seen through droughts and flash floods, while the key strength can be seen through the high resilience of Jadro water spring on different climate change scenarios. Regarding rules, laws and good practices, it is worth to mention the lack of legislation on greywater and rainwater in Croatia as an important challenge, but on the other hand, there are different research initiatives and conferences related to energy and water efficiency that present a potential leverage for a change of status quo. To conclude, the key strength is the implementation of the integral major project (agglomeration Split-Solin) which will consequently lead to the optimization of water use and a higher efficiency of water distribution. When analyzing the public perception assessment results, it is important to highlight some of the key conclusions, such as the fact that a significant number of responders “do not own water-saving facilities”, “are not aware of their annual water supply costs, and “are not aware of the high water loss percentage in the water-supply network”. On the other hand, it is important to highlight that most of the responders are open to changing their personal habits in order to reduce their environmental impact, they are interested in and willing to change and further improve themselves in regards to their water consumption and water saving.