

# **D6.11 Social Innovation Factsheet#2**

# "Fiware4Water outcomes about digital water"

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# **Project Consortium**





# **Executive Summary**

Social innovation is a raising concept that considers as equally important the technological and nontechnological dimensions of innovation. This perspective is determinant to properly tackle the complexity of societal challenges.

As explained by the European Commission, social innovation is embedded in "the development and implementation of new ideas to meet social needs and create new social relationships or collaborations". It describes the social innovation process as composed of four main phases (i) identification of inadequate-unmet-new societal needs; (ii) development of new solutions in response to these societal needs; (iii) evaluation of the effectiveness of new solutions in meeting societal needs; and (iv) scaling up of effective social innovations<sup>1</sup>.

In the context of Fiware4Water, social innovation means tackling digital water challenges by combining the technological and non-technological dimensions of innovation. The aim is to elaborate Fiware4Water story of innovation by widening the technological solutions to the governance structure, the business process and as important ensure the capacity development of the potential users.

The overall goal of Fiware4Water Social Innovation Factsheets is to highlight innovation opportunities for scientists, solution designers, implementers, decision-makers, water authorities, in order to foster short-term improvements in the digital water solutions to address data collection, monitoring issues and decision process.

This document presents D6.11 'Social Innovation Factsheet of Fiware4water outcomes'. The four dimensions of social innovation are used to present the wide spectrum of Fiware4water results and outcomes as well as their synergies:

- The technological dimension focuses on the IT solutions by the 4 demo cases and using FIWARE architecture,
- The capacity development dimension presents the key initiatives put into place during the life time of the project to ensure the potential end-users can access and use the solutions developed by the project,
- The governance structure dimension highlights the link between F4W outcomes and the EU water related policies, as well as how the socio-political and citizens engagement can support new governance mechanism including digital water,
- The economic and business dimension reveals some of the foreseen actions that could be deployed from now on to ensure exploitation and market up-take after the end of the project.

<sup>&</sup>lt;sup>1</sup> https://ec.europa.eu/growth/industry/policy/innovation/social\_en



## **Document Information**

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# Revision history

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1	01/09/2021	Natacha Amorsi (OiEau)	Draft table of content
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3	27/01/2022	Natacha Amorsi (OiEau)	Version to be reviewed
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# List of Acronyms/Glossary

CD	Capacity Development
СоР	Community of Practice
EU	European Union
EURECAT	Technology Centre in Catalonia
EYDAP	Athens Water Supply and Sewerage Company
F4W	Fiware4Water project
GTWF	Great Torrington Water Forum
INBO	International Network of Basin Organisation
KWR	Dutch research institute for the drinking water sector
NTUA	National Technical University of Athens
SIF	Social Innovation Factsheet
SWW	South West Water
TWZ	German Water Centre
UNEXE	University of Exeter
Waternet	Joint organization of the City of Amsterdam and the Water Authority Amstel Gooi and Vecht



# I. Introduction and background

After shortly presenting F4W (section I.1), deliverable 6.11 'Social Innovation Factsheet on Fiware4Water outcomes' describes the reasons why social innovation is important (section I.2), provides the templates used to design the communication material related to social innovation factsheet (section II) and describes the content of the four parts of the SIF (section III):

- Description of the concept
- Definition of social innovation
- Technological solutions developed by F4W
- Capacity development activities put into place
- How the technological and non-technological solutions can support governance structure
- And the current economic and business options envisaged to carry on F4W outcomes after the end of the project.

Section IV gathers the key points in a conclusion and opens up to the next steps.

#### I.1. Fiware4Water in a nutshell

FIWARE is a smart solution platform, funded by the EC (2011-16) as a major flagship PPP, to support SMEs and developers in creating the next generation of internet services, as the main ecosystem for Smart City initiatives for cross-domain data exchange/cooperation and for the NGI initiative. So far little progress has been made on developing specific water-related applications using FIWARE, due to fragmentation of the water sector, restrained by licensed platforms and lagging behind other sectors (e.g. telecommunications) regarding interoperability, standardisation, cross-domain cooperation and data exchange.

Fiware4Water intends to link the water sector to FIWARE by demonstrating its capabilities and the potential of its interoperable and standardised interfaces for both water sector end-users (cities, water utilities, water authorities, citizens and consumers), and solution providers (private utilities, SMEs, developers).

## I.2. Why social innovation?

Social innovation is a raising concept that considers as equally important the technological and nontechnological dimensions of innovation. This change is determinant to properly tackle the complexity of societal challenges. As explained by the European Commission, social innovation is embedded in *"the development and implementation of new ideas to meet social needs and create new social relationships or collaborations"*<sup>2</sup>. It describes the social innovation process as composed of four main phases (i) identification of inadequate/unmet/new societal needs; (ii) development of new solutions in response to these societal needs; (iii) evaluation of the effectiveness of new solutions in meeting societal needs; and (iv) scaling up of effective social innovations. To really impact society and bring changes of practices for a better understanding of the relation between economic activities and their impacts on the natural resources, each innovation should embrace different dimensions:

- the technological that focuses on new or hybrid solutions,
- the capacity development to ensure the solutions will be of value for the potential end-users and used,

<sup>&</sup>lt;sup>2</sup> https://ec.europa.eu/growth/industry/policy/innovation/social\_en



- the governance to ensure the decision process, legal and voluntary frame is ready to support the use and deployment of the solutions,
- The economic/business to ensure the model is viable, accessible for actors to deploy the solutions and consider market up-take.

As reported by the cluster ICT4Water for the European Commission, with regards to the Digital Water Action Plan<sup>3</sup>: "Despite a promising technological scenario, currently, the water domain is characterized by a low level of maturity concerning the integration and standardization of ICT solutions, their business processes and the related implementation in the legislative framework. This is due to the fragmentation of the sector, no holistic vision being set out and a lack of integration and standardization of the technology".

In the context of Fiware4Water, social innovation is one of the solution to end this scenario. **It means tackling digital water challenges by combining the technological and non-technological dimensions of innovation.** It will help to elaborate Fiware4Water story of innovation by widening the technological solutions to the governance framework, the business process and as important ensure the capacity building of the potential users.

The overall goal of the Fiware4Water Social Innovation Factsheets (SIF) is to highlight innovation opportunities for scientists, solution designers, implementers, decision-makers, water authorities, in order to foster short-term improvements in the digital water solutions to address data collection, monitoring issues and decision process.

Some changes have been decided. Instead of the three SIF initially planned over the duration of the project, two SIFs and one Policy brief are being delivered:

- D6.5 "Social Innovation Factsheet n°1" on 'Digital Water on Smart metering and citizen engagement', delivered in December 2020
- D6.11 (this one) "Social Innovation Factsheet n°2": dedicated to Fiware4Water outcomes
- D6.12: instead of the third SIF, the Policy brief will present the relevance of F4W outcomes for European Policies (due date May 2022).

One challenge to develop SIFs is to gather enough mature materials to be promoted, even if they are not fully finalised. That is the reason why this 2<sup>nd</sup> SIF has been delayed in order to gather more details on Fiware4Water outcomes, feedbacks from Demo Cases and Demo Networks.

<sup>&</sup>lt;sup>3</sup> https://ec.europa.eu/futurium/en/system/files/ged/ict4wateractionplan2018.pdf



Factsheet

# II. Communication material: template

The SIF is composed of 4 pages corresponding to an A3 sheet folded in 2 (4 pages A4). Each page corresponds to a block of information.

On the front page, general information on social innovation can be found on the right part. Specific information on the issue tackled by the SIF is available on the left part with the description section (approx. 1800 characters).

Page 4 displays the *Further reading* (with the references) and the *Presentation of* (Fiware4Water) sections

Page 2 and 3 present the four dimensions of social innovation

- the technological solutions (approx. 2300 characters) and the governance structure on page 2 (approx. 2000 characters)
- and the capacity development (approx.1800 characters) and economic and business dimensions on page 3.



social

Innovation

Figure 1: SIF template based on Fiware4Water Social Innovation Factsheet#1





# III. Content of Social Innovation Factsheet #2

The main title of F4W SIF#2 is Digital Water, the sub-theme's title is Fiware4Water outcomes.

#### III.1.Page 1: Description

Smart water management is an important component in addressing environmental and societal challenges. The development of digital water solutions is rapidly evolving with the current development of numerous applications. The combination of recent technological advances in sensors, GIS, mathematical, physically-based models, data-driven models and Artificial Intelligence approaches offers opportunities to improve water management. These technologies, combined with advanced means of visualization such as Virtual Reality, Augmented Reality and Real-Time Rendering are foreseen not only to improve decision-making, but also to assist training of managers and operators, and, most importantly, to be a mean to increase awareness on water issues such as availability and consumption among the general public [a].



**The key challenge** is to provide water managers at different scales (such as cities and river basins) with tailored IT solutions answering their needs and seamlessly integrating to their existing systems. Although the needs and benefits of digital water solutions are acknowledged, their development also raises key issues such as cybersecurity or interoperability aspects to be addressed before their transferability and

Picture 1: ©Water drop-Shutterstock 1109708624

scalability can be envisaged. As a result, water managers can perceive smart solutions as causing additional costs and IT skills dependency. In other words, technological innovation does not seem enough to reach and convince the potential end-users who also have to consider additional questions outside the scope of the IT dimension such as governance, capacity development and economic ones.



#### DigitalWater2020 Synergy group



## III.2. Page 1: Social innovation

- Fiware4Water intends to link the water sector (especially the urban one) to FIWARE by demonstrating its capabilities and the potential of its interoperable and standardised interfaces for both water sector end-users (cities, water utilities, water authorities, citizens and consumers), and solution providers (private utilities, SMEs, developers).
- Over the duration of Fiware4Water (2019-2022), two SIFs and one Policy brief will be delivered. Each of them will present Fiware4Water outcomes through the lens of social innovation.
- Fiware4Water final results and outcomes are the focus of this second SIF.
- As detailed below, social innovation combines four dimensions: technological, governance, capacity development and economic & business. Each is described in a specific section of this thematic SIF.

#### Social innovation box

In Fiware4Water, social innovation means tackling societal, water-related challenges arising from climate change by combining the technological & non-technological dimensions of innovation [c].

- Social innovation refers to those processes and outcomes focused on addressing societal goals, unsatisfied collective needs, as opposed to mere economic returns. It is particularly salient in the context of the complex and cross-cutting challenges that need to be addressed in the field of Water-Energy-Food-Ecosystem and which will not be met by relying on market signals alone.
- Social innovation consists of combinations of (new or hybrids of existing and new) products, processes and services. In order to succeed, social innovation needs to pay attention to technological as well as non-technological dimensions: 1) technology, 2) capacity development, 3) governance structures and 4) economic & business. As such, these four dimensions of the social innovation process cut across organizational, sectoral and disciplinary boundaries and imply new patterns of stakeholder involvement and learning.
- The success of social innovation is reliant on the accountability of diverse stakeholders and across all government levels.



## III.3. Page 2: Technological solutions

Quote "The digital transformation of water is currently enabling real time water quantity and quality monitoring, vastly improved management of infrastructure assets, direct consumer engagement and facilitating the adoption of off-grid and localized infrastructure technologies" [a]

Partners from the Fiware4Water Demo Cases are developing various digital solutions, all using FIWARE reference architecture, among which:

 Smart application for raw water supply in Athens: EYDAP supported by NTUA are developing a web platform where real-time data can be processed, analyzed and visualized from all existing sensors in the conveyance system. Subsequently, prototypes for both water flow and quality applications are currently in a "live" environment, receiving real-time data in the context of FIWARE compliant analytics and models. Two dashboards have been



Figure 2: EYDAP dashboards

implemented to provide feedbacks to the relevant operation staff in EYDAP. The homepage of the platform provides a quick access to real-time data, either via from "water quality" or "water flow" dashboard [b].

- Smart applications for water supply in Cannes: TZW and Suez Smart Solutions are working on the optimisation of drinking water supply and distribution as well as on the resilience of resources management using advanced water forecast. TZW has assessed two innovative water quality low cost nano sensors in their model network. Suez 3S has installed nano stations providing water quality data. A scientific model for automated detection of anomalies in time series is about to be delivered [c].
- Smart application for waste water treatment in Amsterdam: Waternet has dedicated one of the seven treatment lanes of the wastewater treatment plant (WWTP) Amsterdam West to investigate AI based soft sensors and process control strategies for energy optimization and N<sub>2</sub>O reduction using FIWARE system components for data exchange. Researchers from KWR, Eurecat and Waternet have been working on data collection, training of a digital twin and a reinforcement learning (RL) agent for real-time control of the research lane, and development and deployment of near real-time soft sensors within the FIWARE system to estimate air flow and key water quality process parameters [d].
- Smart application for customers in Great Torrington: [e] to launch their customer app helping customers save water through better visibility of smart meter data, SWW, has been actively engaged with a water forum. Two co-design workshops were held. Residents could o brainstorm ideas and decide how the app, which will be available on smartphones free of charge, should look and feel and more importantly, what it needs to do to help customers reduce water consumption (more information is available on the 1<sup>st</sup> SIF [f]).



## III.4. Page 2: Governance Structure

Quote: "Water governance is the set of rules, practices, and processes through which decisions for the management of water resources and services are taken and implemented, and decision-makers are held accountable" [a].

**The EU plays a leading role in enhancing smart water management** [b]. The quality and quantity of water provisions from the Water Framework Directive, including Drinking Water, Floods, Water Reuse, Urban Wastewater Treatment and Groundwater, have been decisive to start the ball rolling with regards to integrated water management at both a national and local level. Further provisions concerned with Data Protection, Access to Environmental Information and Open Data have played the same role on the digital side. More importantly, initiatives such as the EIP Partnership on Smart Cities and the Digital Single Market for Water Services Action Plan have shown the increasing ambition and interest of the EU in digital water governance.

As described by the Policy Action Group of ICT4Water [c], digital solutions provide support to water managers when controlling the general cost of operation but requires investments so planning, simulation and digital decision support can be deployed. The role of digitalisation in achieving a more effective relationship with water end-users is also highly relevant i.e. for citizen engagement, seeking to channel the citizen's enhanced awareness into a proactive involvement both in the co-creation and subsequent implementation of water-based policies.

**Digital water solutions support integrated water resource management** by providing science-based information and knowledge, employed by water managers both for management and forecast tasks and the raising of citizen awareness and engagement. They provide new mechanisms for water governance, widening the possibilities for stakeholders to understand water and societal challenges, and to interact, co-design and co-implement the solutions.

**F4W has experienced these different levels.** The development of digital water solutions brought together different profiles of stakeholders both at the level of the Demo Cases and Demo Networks. The policy and social engagement approach is providing a layer which enlightens the overall process. By providing a space for stakeholders to learn and debate, comprehension and acceptability is rising in unison with the accountability of the stakeholders.



Figure 3: F4W outcomes' contribution to EU policies



## III.5. Page 3: Capacity development

Quote "Enhancing institutional and individual capacity is key to promoting effective water management" [a]

Over the course of Fiware4Water, the capacity development has remained an important focus. Two main axis have been deployed to ensure the results and outcomes of the project reach their potential end-users. This includes the raising awareness dimension, methods and tools to be used by water managers and SMEs (IT developers) and the lessons learnt.

• Raising awareness on topics such as digital water is highly necessary. On one hand, the multiple benefits of smart water solutions still need to be demonstrated. On the other hand, the issues raised by digital solutions such as cybersecurity or cost of maintenance need to be filled with evidence based arguments.



 A series of 10 webinars were organized dealing with various subjects such as the EPANET water network simulator, the benefits of digitalisation and learning experience from the implementation of Water Local Forum [b].

Figure 4: Examples of F4W capacity development activities

- 10 short interviews videos presenting all the dimensions of the projects, progress and deliveries have been regularly released and are available on F4W website [c].
- F4W E-book addressed to non-experts proposes a vernacular presentation of the project with focus on the scientific, socio-political and citizens' engagement dimensions and more [d].
- **Towards stakeholders engagement and co-design**. Since the beginning of the project, the mission of F4W demo networks has been to carry new smart water knowledge to potential end-users.
  - Demo network#1 dedicated to the municipalities in the Danube Lower river area has developed Local Water Forum networks, which led to a follower cities conference [e]. Along the way a CoP has been developed in Timisoara (in Romania) where water related topics are discussed including climate change, cooperation with Serbia and circular water. The CD is also demonstrated with the signature of Declaration of Intends within the local water fora.
  - Demo network#2 dedicated to river basins, organized two large workshops with INBO in 2020 and 2021. River basin managers could learn and exchange on new topics and issues they face to implement digital water solutions [f]. SWW has also implemented a Local Water Local Forum in Great Torrington (GTWF). This is a group of volunteers who meet to discuss how to raise the awareness of water issues at local and world level, then put the ideas into action. Through the frequent interaction with SWW, the GTWF have contributed to co-designing the mobile app for the smart meter consumers [g]. The GTWF have also organised a series local community campaigns to raise public awareness in water conservation and an art competition for school pupils was held to invite children to convey environmental protection ideas via painting [h], [i].
  - Demo network#3 embarked technology providers on a digital water challenge organized through FIWARE network. The winner developed a solution dedicated to AySA Data [j].

In addition, F4W is organizing a series of four workshops to present and debate water digital solutions as well as their link to the European water related policies. DW2020 is also acting to support stakeholders' engagement and has organised a CoP workshop [k].



## III.6. Page 3: Economic and Business opportunities

Quote "Social innovation relies on means other than market mechanisms in order to link the demand and supply sides" [a].

The economic and business opportunities of F4W outcomes have been explored through 6 main steps from interviews to F4W exploitation plan that will be finalised in May 2022 [b]. The overall approach consists in:

- Bringing together the potential end-users profiles with the digital water solutions developed by F4W. This corresponds to F4W value proposition canvas (figure 6, steps 1 to 3). A series of 17 interviews was conducted to get a detailed description of F4W outcomes, namely one product and 3 related services (figure 5).
- Illustrating the nine blocks of the business model canvas (figure 6, step 4) to detail the key partners' activities, resources, customer relationship, channels as well as the cost structure and revenue stream for F4W outcomes. The last two steps (figure 6, steps 5 and 6) will be presented in F4W exploitation plan.



Figure 6: F4W Steps to set the exploitation plan

- The economic and business opportunities of F4W platform and service 3 (figure 5) rely outside the scope of the standard market mechanism. The project has held its ambition by proving the feasibility of linking to the water sector to FIWARE and demonstrating its capabilities and the potential of its interoperable and standardised interfaces for water sector end-users. The sustainability of F4W platform is closely related to FIWARE and its 5<sup>th</sup> Mission Support Committee dedicated to digital water, announced in July 2021 [c]. At that stage, the development of F4W platform is foreseen towards two main directions:
  - Be an incubated FIWARE Generic Enabler as a pre-initial step to be a FIWARE Generic Enabler in the FIWARE Catalogue of components. This means that they will be open source components and complaints with the requirements of the FIWARE Community.
  - Be a commercial solution and be part of the FIWARE marketplace and take the advantage to be selected by anyone in the FIWARE Ecosystem to develop Smart Water solutions.
- **Exploitation opportunities of service 1 and 2** are at that stage strongly related to the development of Local Water Forum and the declaration of intents providing a way forward after the end of F4W in May 2022.



## III.7.Page 4: Futher reading

#### References for the description part

[a] Amorsi N., Brékine A., Caradot N., Fernadez J., Le Gall F., Lopez F., Schwarzmueller H., Segura A. (2022), Smart Water Management, Springer handbook, under review

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[c] Amorsi N, Sonia Siauve S, Wehn U. (2017), AfriAlliance social innovation factsheet on monitoring drinking water quality for improved health in Africa, AfriAlliance, 4p., https://afrialliance.org/knowledge-hub/afrialliance-social-innovation-factsheets/social-innovation-factsheet-11-monitoring.

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[b] EYDAP (2021), Demo case update, https://www.fiware4water.eu/sites/default/files/F4W%20-%20EYDAP%20-%20Demo%20Case%20Update%20-%20210921.pdf

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[a] OECD (2011), Water Governance in OECD Countries: A Multi-level Approach, OECD Studies on Water, OECD Publishing; <u>http://dx.doi.org/10.1787/9789264119284-en</u>.

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[c] European Commission, Executive Agency for Small and Medium-sized Enterprises, Elelman, R., Wencki, K., Chen, A., et al., *The need for digital water in a green Europe : EU H2020 projects' contribution to the implementation and strengthening of EU environmental policy*, Publications Office, 2021, <u>https://data.europa.eu/doi/10.2826/4352</u>

#### References for the capacity development part

[a] SIWI, https://www.siwi.org/what-we-do/capacity-building/

[b] <u>https://www.fiware4water.eu/deliverables#webinars</u>

[c] https://www.fiware4water.eu/deliverables#videos

[e] <u>https://www.fiware4water.eu/demo-network-1-lower-danube-romania-bulgaria-hungary-croatia-serbia-and-moldova-middle-east-jordan</u>.

[f] https://www.fiware4water.eu/sites/default/files/F4W%20-%20UNEXE%20-%20EURO-INBO%202021.pdf

[g] SWW (2021), Demo case update, https://www.fiware4water.eu/sites/default/files/F4W%20-%20SWW%20-%20DemoCase%20update%20-%2020102021.pdf



[h] https://www.youtube.com/watch?v=HOoCAUWpHes&feature=youtu.be

[i] https://www.fiware4water.eu/demo-cases/united-kingdom-smart-metering-and-citizenengagement-case

[j] https://www.watershare.eu/watershare-news/the-fiware4water-challenge-has-a-winner/

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#### References for the business dimension part

[a] Amorsi N., Sonia Siauve S., Wehn U. (2017), AfriAlliance social innovation factsheet on monitoring drinking water quality for improved health in Africa, AfriAlliance, 4p., https://afrialliance.org/knowledge-hub/afrialliance-social-innovation-factsheets/social-innovation-factsheet-11-monitoring.

[b] Osterwalder A., Pigneur Y. (2010), Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers (Strategyzer), John & Sons, 288p

[c] https://www.fiware4water.eu/news/fiware-announces-kick-5th-mission-support-committeeduring-fiware-smart-fest

### III.8. Page 4: Presentation of

#### a) Fiware4Water context

Fiware4Water is a three years project funded by the European Horizon 2020 research and innovation program. Fiware4Water links the water sector especially the urban one to FIWARE by demonstrating its capabilities and the potential of its interoperable and standardised interfaces for both water sector end-users (cities, water utilities, water authorities, citizens and consumers), and solution providers (private utilities, SMEs, developers).



Picture 2: OiEau's building in Limoges, France

So far little progress has been made on developing specific water-related applications using FIWARE, due to fragmentation of the water sector, restrained by licensed platforms and lagging behind other sectors (e.g. telecommunications) regarding interoperability, standardisation, cross-domain cooperation and data exchange.

#### b) Fiware4Water activities

The solutions developed by Fiware4Water tackled the whole water cycle while being embedded in a social innovation approach with the 4 demo cases addressing (i) the raw water supply optimisation (Greek case), (ii) the water supply system management (French case), (iii) the intelligent control of waste water (Dutch case) and (iv) the smart metering and citizen engagement (English case).

The promotion and solutions uptake are experimented through Fiware4Water Demo Networks at the Danube region level (DemoNetwork#1), with the River Basins Organisations (DemoNetwork#2) and with FIWARE Ecosystem (DemoNetwork#3).

Website: www.fiware4water.eu



#### c) Realisation

Authors: Natacha Amorsi (OiEau)

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Graphic Design: OiEau

Version: February 2022

d) Acronyms

CD	Capacity Development
СоР	Community of Practice
EU	European Union
EURECAT	Technology Centre in Catalonia
EYDAP	Athens Water Supply and Sewerage Company
F4W	Fiware4Water project
GTWF	Great Torrington Water Forum
INBO	International Network of Basin Organisation
KWR	Dutch research institute for the drinking water sector
NTUA	National Technical University of Athens
SIF	Social Innovation Factsheet
SWW	South West Water
TWZ	German Water Centre
UNEXE	University of Exeter
Waternet	Joint organization of the City of Amsterdam and the Water Authority Amstel Vecht

e) Consortium



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# IV. Conclusion

This report presents the second Social Innovation Factsheet dealing with Fiware4Water outcomes. A specific designed document has been produced to disseminate in a tailored way towards water stakeholders<sup>4</sup>.

D6.11 is based on the current state of progress of F4W solutions. The final version of digital solutions will be presented in the second version of F4W E-book to be delivered in May 2022. D6.11 illustrates how the four dimensions of social innovation can be articulated, how the technological, governance, capacity development and business/economic dimensions work together in complementary ways to ensure the digital water solutions tackle the complexity of societal challenge.

The third SIF has been replaced by a Policy Brief that will focus on F4W contribution to EU water related policies (May 2022).

<sup>&</sup>lt;sup>4</sup> The designed document is available on https://www.fiware4water.eu/deliverables#dissemination