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Brief Description	This document aims to be a master plan and a manual to guide and facilitate the Consortium on how to collect, produce, manage and reuse data of the Project "Demonstration of water loops with innovative regenerative business models for the Mediterranean region, HYDROUSA" Grant Agreement No 776643. The current version was created on the 30 th month of the project and contains updated information.
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EXECUTIVE SUMMARY

The current document (D1.4) is the first updated version of the Data Management Plan (DMP) of the project *"Demonstration of water loops with innovative regenerative business models for the Mediterranean region, HYDROUSA"* Grant Agreement No 776643". This deliverable is based on the first version of the DMP (D1.3) and updated in the light of progress made so far in the collection, production, management and reuse of HYDROUSA's project data.

This deliverable was formed in line with the *"Guidelines on Data Management in Horizon 2020"* (version 3 issued in July 2016) and the *"Guidelines on Open access to Scientific Publications and Research data in Horizon 2020 (version 3.2 issued in March 2017)"*.

The Data Management Plan (DMP) is not a fixed document, but it will evolve as the project develops. More specifically, the first version of the DMP (D1.3) was delivered in the 6th month of the project (December 2018). In order to achieve proper management of the project's data, an overview of the data sets generated by the HYDROUSA project and the special terms that accompany them was presented. Then, in the 18th month of the project, the DMP was updated, while as mentioned above, this document is its first updated version and is submitted with this deliverable (D1.4) at month 30. Subsequent versions of the DMP will include more details and describe the practical data management processes implemented by the HYDROUSA project, due to the collection and production of data from the project's demonstration sites. The DMP will be updated at least once in the final review by submitting the deliverable D1.5 in month 54 of the project.

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ABBREVIATIONS

CO	Coordinator
DMP	Data Management Plan
DPO	Data Protection Officer
ExC	Executive Committee
GDPR	General Data Protection Directive
IP	Intellectual Property
QRs	Quarterly Reports
WP	Work Package

1. INTRODUCTION

1.1 What is DMP

Figure 1 illustrates the complete life cycle of data generated throughout the project. The Data Management Plan (DMP) describes the different types of data that are generated and collected over the lifetime of the project, the standards to be used, the way in which the research data and parts of the datasets are preserved and then distributed and reused.

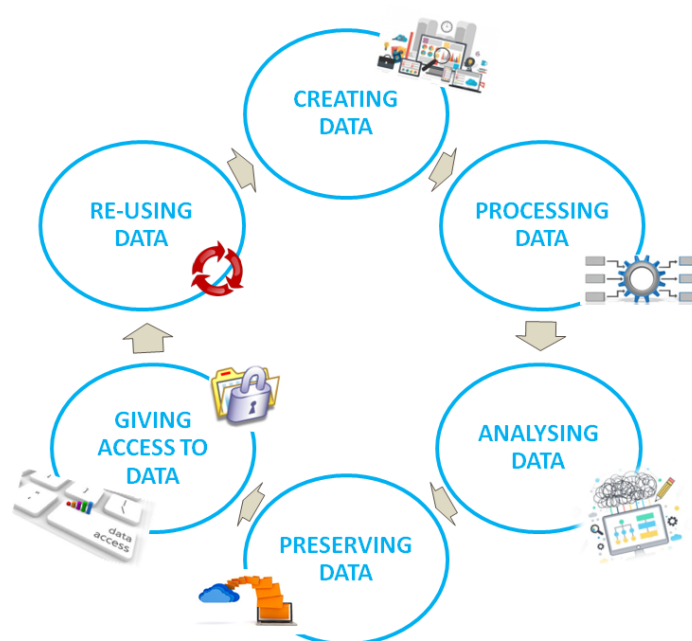


Figure 1. Data life cycle

1.2 Purpose of Data Management Plan

The DMP aims to provide an analysis of the key elements of the data management policy that is applied in the HYDROUSA project and is used by the Consortium regarding the project's data.

1.3 Objective of the initial DMP

The basic objective of the current document is to specify how data is collected, processed, monitored, catalogued and disseminated. It addresses: (i) data set reference and name, (ii) data set description, (iii) confidentiality, (iv) standards and metadata, (v) data dissemination and policies for data sharing and public access, (vi) plans for archiving and preservation, (vii) intellectual property (IP) protection roadmap, including selection of data streams for external publication, to avoid conflicts with IP protection. DMP is not a fixed document, but it evolves as the project develops. More specifically, this document is the first updated version of the DMP, delivered in month 30 of the project (December 2020). In order to achieve proper and effective project data management, an overview of the data sets generated by the HYDROUSA project and the specific terms that accompany them is presented below. Future versions of the DMP will include more details and describe the practical data management processes applied by the HYDROUSA project.

2. DATA SET NO 1: HYDROUSA MANAGEMENT DATA

2.1. Data Summary

The purpose of data collection is to document all data generated during the project's implementation by the HYDROUSA consortium. The file formats to be generated and collected in this dataset are:

Presentations: Since the beginning of the project, many PowerPoint presentations have already been developed (project meeting presentations, presentation at conferences, workshops, seminars etc.), and many presentations are expected to be created during the project's lifetime. Usually these presentations are in the context of management, dissemination and exploitation activities. The files created by the responsible member of the project for each presentation is sent to the coordinator in the form of .pptx files using the Microsoft PowerPoint software. The size of presentations cannot be estimated, as it varies depending on the media it contains.

Meeting minutes: Ten project management meetings will be held, once every 6 months. During these meetings, there is at least one representative from each partner, as important decisions are made on the technical, financial, legal, administrative, dissemination and communication activities of the project, as well as to resolve any conflict. Moreover, Executive Committee (ExC) tele-meetings are held, usually every 2 months, attended by the leaders of all work packages (WPs) and chaired by the coordinator (CO). These meetings are aimed at monitoring the progress of the project and avoiding any risk. During these meetings, minutes are kept as the official document of all the decisions taken, the members involved, the venue and the discussions that took place during the meeting. The minutes are saved as word (.docx) and PDF (.pdf) files, stored by the CO in a private server and used by the members of HYDROUSA project as a reference on what has been discussed and decided. The size of these documents does not exceed 2MB each in storage space.

Deliverables: Project management (WP1) contains 7 deliverables produced during the project, which are presented in Table 1.

Table 1. Deliverables of Project Management (WP1)

Deliverable	Title	Dissemination level	Scope
D1.1	Consortium Agreement	Confidential	The signed agreement among partners which specifies in detail the following: Monitoring project progress, Partner communication, Risk assessment and contingency planning, Decision making and conflict resolution, intellectual property rights and distribution of resources.
D1.2	Project Management Plan	Confidential	It consists of the project plan and structure, project governance, quality standards for project deliverables and procedures.

D1.3	Data Management Plan	Public	It specifies how data collected, processed monitored, catalogued and disseminated. It addressed: (i) data set reference and name, (ii) data set description, (iii) confidentiality, (iv) standards and metadata, (v) data dissemination and policies for data sharing and public access, (vi) plans for archiving and preservation, (vii) IP protection roadmap, including selection of data streams for external publication, to avoid conflicts with IP protection.
D1.4	First Update of the Data Management Plan	Public	Since the DMP is expected to mature during the project, more developed versions will be included as additional deliverables.
D1.5	Second Update of the Data Management Plan	Public	Since the DMP is expected to mature during the project, more developed versions will be included as additional deliverables
D1.6	Green event leaflet	Public	It supports all partners to hold green events for at least internal meetings. It sets guidelines for internal (among partners), but also external use.
D1.7	Risk management Plan	Public	It identifies the project risks, their probability of occurrence and their severity. It also describes proposed risk mitigation measures to achieve successful project implementation, including actions to mitigation the COVID-19 issues.

The responsible partner for each deliverable documents it and delivers it to the Consortium in the form of a document (.docx) for internal review before submitting to the EU portal, while the final version is saved as a PDF (.Pdf) document and is stored in the private server by the CO. The expected size of each deliverable is estimated to be about 5MB.

Quarterly reports (QRs): The leader of each work package (WP) together with the leaders of each task should develop a quarterly report every three months, so as to present the progress of their WP. All quarterly reports are delivered to the Coordinator in the form of a document (.docx) for review. Then, the final version is stored in the private server as a PDF (.Pdf) document so that each partner has the opportunity to be informed about the progress of the project. The expected size of each QR is estimated not to exceed 15 MB.



The aforementioned data will not be reused in the future. On the contrary, new data will be generated during the lifetime of the project. In addition, the data contained in data set 1 will be useful as a reference mainly among the partners of HYDROUSA project.

2.2 Fair Data

2.2.1 Making data findable, including provisions for metadata

The data that is collected in this set is saved as a PDF form, so this data cannot accept changes and formatting in the future (no versioning). Subsequently, metadata is not expected to be used, as it is confidential data that is stored on a private server and cannot be findable. The data of deliverables D1.3, D1.4, D1.5 and D1.6 should be available to access since according to the Grant Agreement No 776643 these deliverables are classified as public. The aforementioned deliverables should be uploaded to the project's website (www.hydrousa.org) and any interested party is able to access them from the navigation menu. The name convection of the data determined to be given is as follows:

- [HYDROUSA – Data management plan.pdf](#)
- [HYDROUSA – First update of data management plan.pdf](#)
- [HYDROUSA – Second update of data management plan.pdf](#)
- [HYDROUSA – Green event leaflet.pdf](#)
- [HYDROUSA – Risk Management Plan](#)

2.2.2 Making data openly accessible

As already mentioned, the data of this collection is confidential and is stored on a private server by the project coordinator. Only members of the consortium have access to this dataset. On the contrary, the deliverables that are openly available are stored in a pdf file format and then can be opened with the use of the “Adobe Acrobat Reader” software (free) without any restriction.

For example, deliverables D1.3, D1.6 and D1.7 of WP1 are already available to the public through the project website (www.hydrousa.org).

2.2.3 Making data interoperable

The openly available deliverables were stored in pdf format and can only be used as a reference.

2.2.4 Increase data re-use (through clarifying licenses)

As specified in the Grant Agreement the data from Deliverables D1.1 and D1.2 are confidential; in extent, there can be no data re-use for it. The following deliverables are public: D1.3, D1.4, D1.5, D1.6 and D1.7. The above deliverables are openly available and can be used freely by any interested party, as they have already been uploaded on the HYDROUSA website (www.hydrousa.org). This way data reuse can be enhanced. For the deliverables that are openly accessible (D1.3, D1.4, D1.5 and D1.6), the “Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International Public License” will be used to allow potential parties to freely use them.

2.3 Allocation of resources

The cost of data collection has been included in HYDROUSA budget, specifically in WP 1 as personnel cost.



2.4 Data security

The management dataset will be stored on a private server and will only be shared with members of the HYDROUSA consortium. The publicly available deliverables are hosted on the server's website, following the host's security protocols. Periodically, the private server backs up all the files externally to ensure that the dataset is recovered safely.

2.5 Ethical aspects

The minutes of the project's meetings falls into the "ethical aspect" area, as the positions of each member are recorded. Accordingly, at the beginning of each meeting, all members are informed and, after giving their consent, the minutes are recorded.

2.6 Other issue

Not applicable

3 DATA SET NO 2: USER REQUIREMENTS AND CO- CREATION & TRAINING ACTIVITIES

3.1 Data summary

This section is related to the data collected from the co-creation and training activities that have been carried out in the 6 demonstration areas of HYDROUSA project. These activities aimed at involving the community, collecting inputs, including the public and stakeholders in the decision-making process for the design specifications of the project systems and their participation in the evaluation process. Specifically, the purpose of the user-requirement dataset is to take into account the requirements of end-users as well as stakeholders located in demonstration sites, regarding the concepts of agroforestry and fertigation, in terms of the online monitoring and control of irrigation systems. These requirements have been used in the design, performance and control of the aforementioned systems so as to truly meet the needs of end users. Following the requirements of the General Data Protection Regulation (EU) 2016/679 (GDPR), all participants were informed about the project as the Participant Information Sheet was given to them and they were asked to fill in the consent form developed. These documents have been developed in Deliverable 10.2.

Table 2 presents the co- creation activities that have been carried out within the HYDROUSA project.

Table 2. Summary of co-creation activities implemented within HYDROUSA project

Location of event	Stakeholders	Type of co-creation activity
Lesvos HYDRO1 & HYDRO2	Municipalities, water utilities, farmers, farmers' associations, SMEs	Interviews Workshop Meetings
Mykonos HYDRO3 & HYDRO4	Municipalities, water utilities, farmers, SMEs, eco-tourist facilities	Interviews
Tinos HYDRO5 & HYDRO6	Municipalities, water utilities, farmers, farmers' associations, eco-tourist facilities, public	Interviews Workshop
Nice All HYDROs	Consortium members	Focus group survey within HYDROUSA consortium member

Different approaches were used by the IHA team in each co-creation activity, depending on the objectives of each event, with the aim of the smooth integration of the community in the HYDROUSA project. In addition, a questionnaire was developed by ALCN in collaboration with the IHA team to understand local dynamics and politics, the socio-cultural environment, the economic situation and the potential opportunities and obstacles that may arise. The questions contained in the questionnaire relate to water consumption in the demonstration areas, existing water and wastewater treatment methods, as well as water requirements for agricultural activities.

The process of determining the user's requirements was divided into 2 phases. The preliminary phase took place on the islands of Mykonos, Lesvos and Tinos through interviews. Questionnaires were designed by the AGENSO team, where stakeholders answered questions about the water and wastewater treatment / reuse system that will be developed at each demonstration site and the potential implementation of low-cost sensors. It is worth noting that the interviews were structured in such a way as to meet the different needs of each system.

These questionnaires provided the consortium with important information regarding:

- The measurements parameters and the automation capabilities that the various stakeholders are interested
- The platform functionalities
- The technical characteristics of the ICT components

The other seminars/workshops that will be implemented will explain the benefits arising by HYDROUSA technologies bringing together:

- Decision makers including water authorities, regional authorities, municipalities bringing their perspective on the current status quo, and
- Other stakeholders including industries, environmental companies, water and wastewater treatment plant operators, water utilities
- General public; already the first webinar was held by the CWP team in collaboration with the ICRA, NTUA and IHA teams on July 9, 2020 entitled " Towards a Circular Economy Model for The Water Cycle: HYDROUSA Project". The purpose of this seminar was to introduce the solutions of the HYDROUSA project to a wider audience.

The formats of the files generated and collected in this dataset are expected to be:

- Microsoft Word documents (.docx) for questionnaires
- Microsoft Excel documents (.xlsx) that are the result of the questionnaires processing

In addition, based on the results obtained from these surveys, the following deliverables were created and stored as pdf format (Table 3).

This data collection was particularly useful for the project consortium but also for the efficient operation of HYDROUSA systems.

Table 3. Deliverables related to data set No 2: User requirements and other workshops

Deliverable	Title	Dissemination level	Scope
D4.1	Plan for participatory model for community engagement	Public	A comprehensive plan for the engagement of the community was developed through a participatory model. The main focus of the model includes methods of engaging community members, including them in the decision-making process and evaluation of HYDROUSA activities and especially in co-creation activities. The plan was developed from the results of public workshops.

D4.3	Catalogue of selected plants, description, availability and product development options	Public	D4.3 includes a comprehensive catalogue of all the plants and crops that will be grown on the site. The catalogue was developed with the help of the local community through the participatory model (D4.1) as well as the soil analysis carried out. The catalogue includes the descriptions, availability, market price and prospects of the selected plants.
D5.2	User requirements and specifications definition	Public	It presents the conducted survey and focus groups results and focuses on the most important aspects users find useful.
D5.3	Updated user requirements and specifications definition	Public	It presents an updated version of D5.2 including the findings from the co-creation activities.
D9.3	Report on Dissemination and Communication	Public	It is the 2-year evaluation describing the dissemination and communication activities implemented during the period M1-M24 and measuring the outcomes against the KPI (Includes co-creation and user requirements training activities). Potential weak points are identified to take action and increase the diffusion.
D9.6	Report on the co-creation and training activities	Public	We build social and physical on-site learning environments aiming to engage and connect directly with the local community with the HYDROUSA project. These co-creative activities (info points, summer schools, Hackathon, Residencies and workshops) will be our point of monitoring and collecting user requirements that would shape future development and scaling decisions. D9.6 will provide information on all the workshop activities implemented for HYDROUSA.

3.2 Fair Data

3.2.1 Making data findable, including provisions for metadata

The data collected here is confidential and is stored on a private server by the project coordinator. Only members of the consortium have access to this dataset. However, the deliverables that have resulted from the analysis of the questionnaires are openly available. Specifically, D4.1, D4.3, D5.2, D5.3 and D9.3 were stored as a pdf file and can be opened using "Adobe Acrobat Reader" software (for free) without any restrictions. Each interested party can locate the desired document using the navigational menu of the website (www.hydrousa.org).

Metadata will not be created, since this dataset will not be changed once the data is approved by the EC, thus, no versioning is required.



The name convection of the aforementioned data is as follows:

- [HYDROUSA- Plan for participatory model for community engagement](#)
- [HYDROUSA - Catalogue of selected plants, description, availability and product development options](#)
- [HYDROUSA – User requirement and specification definition.pdf](#)
- [HYDROUSA – Updated user requirement and specification definition.pdf](#)
- [HYDROUSA - Report on Dissemination and Communication](#)
- [HYDROUSA – Report on the co-creation and training activities](#)

3.2.2 Making data openly accessible

As already mentioned this data set is confidential and is stored on a private server by the project coordinator. Only members of the consortium have access to the questionnaire results file, as it contains confidential information. However, the analysis of these results is part of D4.1, D4.3, D5.2, D5.3 and D9.3, which are freely available in pdf format and can be opened using Adobe Acrobat Reader software (free) without restriction. Finally, the template of the questionnaires designed during the project is available to the public through the HYDROUSA website.

3.2.3 Making data interoperable

The deliverables file was stored in pdf format and can only be used as a reference. However, the questionnaire template is in Word document format, which is the most commonly, used text format and also allows the user to export it in many formats and further processes.

3.2.4 Increase data reuse (through clarifying licenses)

The “Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International Public License” will be used for all deliverables that are openly available through the project website and belong to this dataset, so as to allow potential parties to freely use them.

3.3 Allocation of resources

The cost of this data collection has been included in HYDROUSA budget; specifically in the personnel cost of WP4, WP5 and WP9.

3.4 Data security

The publicly available deliverables are hosted on the server's website, following the host's security protocols. The data is also stored on the private server, which backs-up all files externally at regular intervals to ensure that the data set is safely retrieved.

3.5 Ethical aspects

The data obtained from the results of the questionnaires fall into the ethical area. The initial results of the questionnaire contain personal information of the participant and cannot be made public. In order to maintain the anonymity and confidentiality of the participants, the results of the questionnaires are private on the server and are even limited among the members of the consortium. Mr Zisis Tsiropoulos from the company AGENSO has been appointed as Data Protection Officer (DPO) of HYDROUSA project. According to the General



Data Protection Directive (GDPR) 2016/679 he is responsible for maintaining the anonymity and distributes the file in the interested partners with caution. The SME AGENSO is a project partner and is dealing with the development of platforms for the management of data in the project. AGENSO has significant experience in the implementation of procedures for data management within existing HORIZON2020 projects. ***It is worth noting that the protocol and the criteria for the identification and recruitment of research participants described in the deliverables D10.2 (H – Requirement No.2) and D 10.3 (POPD – Requirement No.3) were strictly applied.***

3.6 Other

Not applicable

4 DATA SET NO 3: DESIGN AND INSTALLATION DATA OF HYDRO 1-6

4.1 Data summary

The purpose of this dataset is to collect the data required for the development of the HYDROUSA systems in the 6 demonstration sites, HYDRO 1-6. The origin of these data is personal work by the members of the consortium and therefore data cannot be re-used. The data contained in this set are technical descriptions and methodologies, calculations and flow charts.

The expected file size of this dataset cannot be yet accurately estimated. This data is saved in the project's private server and accessed only by the consortium members. This dataset is extremely valuable to the members of the consortium in general.

The formats of the files that were generated and collected in this dataset are:

- Microsoft Word documents (.docx) for the technical descriptions
- Microsoft Excel documents (.xlsx) for the calculations and for the flow charts (potentially)
- AutoCAD files (.dwg) for the drawings which were produced for the design of the systems.
- JPEG, PNG AND GIF formats for images from systems installation and running in demo sites

From this set of data, 13 deliverables will be developed as listed in Table 4. Out these deliverables, D2.1, D2.3, D2.5, D3.5, D3.6 and D4.2 are confidential, while D2.2, D2.4, D2.6, D3.1, D3.2, D3.3, D3.4 and D3.7 are public. Confidential deliverables are accessible only by members of the consortium. All the deliverables are stored on the private server as pdf format. The Deliverables which are public are available on the project's website freely available for download by the interested parties.

Table 4. Deliverables that include design and installation data

Deliverable	Title	Dissemination level	Scope
D2.1	Design of rainwater management system	Confidential	It consists of the development of the design methodology and drawings of the rainwater management systems HYDRO3&4, including technical description, methodology, calculations and drawings of the systems. The design concepts i.e. technical description, methodology, calculations, pictures and drawings were different for the two proposed rainwater management systems. The exact amount of recovered rainwater and surface runoff, the precise infrastructure location, the upgrade and maintenance of the configuration, the necessary treatment activities, as well as remote monitoring installations is determined in the scope of this deliverable report.

D2.2	Rainwater management systems installed and running	Public	The intended systems' function is described in a comprehensive report including the technical drawings of the design phase, several photographs of the construction process and description of the final setup.
D2.3	Design of the Mangrove Still Upgrade	Confidential	The design concepts and prototypes were conceived according to the problem-solving method Biomimicry. The results from the workshop following this methodology and drawings of the Mangrove Still Upgrade, including technical description, methodology, calculations and drawings of systems were included in this deliverable.
D2.4	Mangrove Still prototype installed and running	Public	The Mangrove Still is up-scaled to a system, where saltwater is evaporated and condensed inside the structure. A greenhouse is fed with the produced water. The high humidity within the greenhouse allows tropical/subtropical growing conditions for plants. This deliverable includes details about the development and the prototype assembly process. The accompanying report contains photos, schemes and functions of the Mangrove Still and Greenhouse prototype
D2.5	Upgrade of the decentralized ecotourism water management system	Confidential	Description of the implemented upgrade's in ELT overall water management plan, taking into account water collection, storage and use by the development of prototype systems. The difficulties of upgrading a running off-grid system are addressed and the overall system is outlined in drawings, pictures, and calculations. The benefits and drawbacks of the implementations are addressed.
D2.6	Demonstration of ecotourist water loops	Public	This demonstrator is approved with photographs of the installed, prototype rainwater harvesting and storage systems and the established water vapour catchment systems.
D3.1	Design of the UASB and biogas upgrade	Public	D3.1 comprises the detailed design methodology of the upflow anaerobic sludge blanket, including sizing, electrical connections and preliminary control manoeuvres. It includes the technical description with methodology including a section on the benefits and limitations of the technology, preliminary design calculations with adequate explanations and drawings of the system. A list of the elements required for the build-up (brand, model, materials, main characteristics, power, etc.), as well as a P&ID were included as well. The design of the equipment attached to the UASB

			(namely the biogas storage and the biogas upgrade system), was described herein as well. Finally, a list of considerations for the operation of the systems (serving as a preliminary operation manual) and safety instructions were included.
D3.2	Design of the constructed wetlands	Public	D3.2 consists of the detailed design methodology and drawings of the full scale wetland including technical description with methodology, detailed design calculations and drawings of the system. A list of the elements/materials required for the build-up as well as a P&ID were included as well. Furthermore, a description of the two pilot scale wetlands (bio-electrified wetland and aerated wetland) was included.
D3.3	UASB and biogas upgrade installed and operating	Public	D3.3 presents the developed and fully operative, prototype UASB system together with the attached equipment (biogas storage and upgrade systems), according to the calculations and additional information shown in D3.1. D3.3 will include a series of photos, drawings and P&ID of all the different systems and sub-systems with appropriate description, including piping, electrical connections and 2-D and 3-D implementation plans. A detailed list of every piece of equipment included in the plant (pumps, sensors, valves, etc.), together with their respective operating manuals and a description of their function within the plant will be provided. The deliverable will incorporate a description of the construction, installation and start-up of the entire plant. Special attention will be paid to the preliminary hydraulic and safety tests, which will be duly documented. It will also describe the development challenges and how these were resolved. Finally, the Deliverable will comprise an in depth operation manual for the entire system and safety instructions for its use.
D3.4	Constructed wetland installed and operating	Public	The deliverable consists of the detailed description of the development of the full scale, prototype wetland in Lesvos as well as the installation of the pilot bio-electrified wetland and the aerated wetland. This deliverable will include a series of photos, drawings and P&ID of all the different systems and sub-systems with appropriate description, including piping, electrical connections and implementation plans. The deliverable will include photos from the installation of the systems and of the installed systems. It will also include a description of the start-up process.

D3.5	Upgrade of the decentralized ecotourism wastewater management	Confidential	D3.5 describes the upgrades implemented in an ecotourist facility for wastewater management. The report also includes a design methodology and appropriate calculations as well as drawings and P&ID of the prototype wastewater treatment systems implemented which include a small sedimentation tank, a reedbed system and UV disinfection unit.
D3.6	Design of the composting system	Confidential	The composting system was designed within a biomimicry design workshop, where biological processes are applied in technological systems. At this workshop many disciplines and academic levels come together to be initiated and further facilitate the innovation process. In D3.6 the methodology of this workshop together with the outcome was reported together with the technical drawings of the composting system, including technical description with calculations
D3.7	Composting reactor installed and running	Public	D3.7 provides photos of the construction of this prototype and the description of the start-up phase of the composting process used to treat sewage sludge from the UASB reactor and green material.
D4.2	Design of the preparation of sites	Confidential	D4.2 consists of a report that covers the design methodology for the preparation of the sites for the agricultural activities of the project. The design includes drawings showing the irrigation system and the placement of trees, bushes, and other crops. The report determines the different agricultural activities based on the different sources of water (e.g. collected rainwater, treated wastewater, desalination, etc.) available as well as the soil in the different regions.

4.2 Fair data

4.2.1 Making data findable including provisions for metadata

As described above, some of the deliverables developed from this dataset are confidential and are stored on a private server by the project coordinator. Only members of the consortium have access to these data. However, public deliverables of this dataset are saved in pdf format and can then be opened using the "Adobe Acrobat Reader" (free) software without any limitations. Any interested party can locate the desired document using the site's navigation menu (www.hydrousa.org).

Metadata will not be created, since this data set will not change in the future (and after acceptance by the EC), so no version is required.



4.2.2 Making data openly accessible

As already mentioned, this data set includes both confidential and public data. The confidential data are kept on a private server by the project coordinator and only members of the HYDROUSA consortium have access to them. However, public deliverables are openly available in pdf format and can be opened with the use of "Adobe Acrobat Reader" (free) software without any limitation.

4.2.3 Making data interoperable

The publicly deliverables file are stored as pdf format and can only be used as a reference.

4.2.4 Increase data re-use (through clarifying licenses)

Regarding the deliverables that are available to the public, the "Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International Public License" will be used so as to allow potential parties to freely use them.

4.3 Allocation of resources

The cost of data collection has been included in HYDROUSA budget, specifically in Work Package 2 & 3 as personnel cost.

4.4 Data security

The publicly available deliverables are hosted on the server's website, following the host's security protocols. The data are also stored on the private server, which backs-up all files externally at regular intervals to ensure that the data set is safely retrieved.

4.5 Ethical aspects

Not applicable

4.6 Other

Not applicable

5 DATA SET NO 4: DISSEMINATION DATA

5.1 Data summary

The main purpose of this data set is the development and collection of the data that will be used for the dissemination and communication activities of HYDROUSA project.

In particular, the following file types will be produced and reused during the project:

- **Electronic PDF Documents:** leaflets, brochures, roll-ups, banners, e-newsletter and educational material in general that will be created and will be available in PDF format
- **Videos:** description of HYDROUSA systems, but also a storytelling video and interviews will be available in mp4 format for download. Videos have already been uploaded and are expected to be uploaded to the [YouTube platform of HYDROUSA](#) project for viewing and sharing.
- **Images:** images will be provided with the most used formats, JPEG, PNG and GIF.
- **Presentations:** HYDROUSA will be presented in several Conferences, workshops, trade fairs, pitch events and other activities. The presentations will be available either in PPT or PDF format.
- **Tables, diagrams etc.:** On a quarterly basis, the IHA team follows an internal process to report all dissemination and communication activities carried out during this period by all HYDROUSA partners. All activities are recorded in a xls file, which contains information about the type of activity, the date, etc., in order to be able to qualitatively and quantitatively evaluate all activities and to compare them statistically based on key performance indicators (KPI) of the project. Tables, Figures and charts are usually produced from statistical data processing.

Regarding the e-newsletter in the early stages of the project, the partners communicated the project through their own email to their distribution list, in order to create the initial awareness. At a later stage, a dedicated e-newsletter was developed and distributed to contacts that had shown interest from HYDROUSA website.

From this dataset, 3 deliverables (D9.1, D9.2 and D9.3) have already been developed and another 4 (D9.4, D9.5, D9.6 and D9.7) are to be developed in the future, as shown in Table 5. All deliverables are/will be stored on the private server as a pdf format and will be available on the project website, which is free to download from the public; the submitted deliverables are already available through the project website.

Currently, the size of this dataset cannot be estimated as it is constantly updated. Finally, this data collection will be particularly useful for each interested party, but also for stakeholders and potential end-users of HYDROUSA project.

Table 5. Deliverables of Communication, community building, dissemination (WP9)

Deliverable	Title	Dissemination level	Scope
D9.1	Dissemination and Communication plan	Public	A detailed study of the identified stakeholders groups was conducted and of the strategic activities and channels that will be used towards them and towards the wide public. The vision for the activities undertaken as part of dissemination and communication is that they effectively engage a wide range of stakeholders, from senior levels in industry, regulation and government, to local people and schoolchildren. To achieve this, the strategy and plan for delivery is reported in D9.1 to ensure that project partners communicate a focused, coordinated message regarding the project to targeted stakeholders.
D9.2	HYDROUSA Brand Identity	Public	A common narrative was built by designing: (a) a visual identity, (b) the storyline that reflects on the innovative approach and the methodology of HYDROUSA and (c) a website that will act as the point of reference for the dissemination of the core values and objectives, for the dissemination of the progress – success stories and of plug-ins that citizens can act or participate.
D9.3	Report on Dissemination and Communication	Public	It is the 2-year evaluation describing the dissemination and communication activities implemented during the period M1-M24 and measuring the outcomes against the KPI. Potential weak points were identified to take action and increase the diffusion.
D9.4	Updated report on dissemination and communication	Public	D9.4 consists of the final report on the Dissemination and Communication activities of the project; the report will evaluate all the relevant activities and their impact on the project against KPI; activities of the stakeholder panel will be described along the actual outputs, outcomes and the foreseen impact.
D9.5	Report on the networking and marketing activities	Public	D9.5 will summarize all the networking, clustering and marketing activities which will take place with particular reference to the end users and the impact of these activities. Liaison activities with other H2020 and other EU funded and National projects will be reported.

D9.6	Report on the co-creation and training activities	Public	We build social and physical on-site learning environments aiming to engage and connect directly with the local community with the HYDROUSA project. These co-creative activities (info points, summer schools, Hackathon, Residencies and workshops) will be our point of monitoring and collecting user requirements that would shape future development and scaling decisions. D9.6 will provide information on all the workshop activities implemented for HYDROUSA.
D9.7	HYDROUSA game for increased public awareness	Public	A serious game will be developed according to the different social – cultural – environmental challenges that HYDROUSA addresses that are connected to the water loop at the sites of the project. The game will use actual data and performance analytics of the project and will call for action and participation with a solution oriented approach. The HYDROUSA game will be available for Android and iOS devices through the official application stores.

5.2 Fair Data

5.2.1 Making data findable including provisions for metadata

The collected data is stored both at the private server and at HYDROUSA website, as it will be available to the public. However, the data related to the dissemination material of the project, such as the leaflet, the brochure, the presentations, the educational material include metadata (Table 6), in order to ensure their quality.

Table 6. Metadata of dataset No 4

Creator	The HYDROUSA partner responsible of the creation of this dataset
Title	The label of this dataset
File type	The format of the dataset (pdf, pptx, jpeg etc.)
File Size	The size of the dataset
Version	The version number of the dataset
Date	The creation date

Regarding the Deliverables, D9.1 - D9.7 will be saved in pdf format and will then be opened using the "Adobe Acrobat Reader" (free) software. Any interested party will be able to find the desired document using the site's



navigation menu (www.hydrousa.org). Metadata will not be created, since this data set will not change in the future, so no version is required.

5.2.2 Making data openly accessible

In HYDROUSA website, each interested party is able to find these data either by following the menu or by using the search bar and querying the name of the dataset as a keyword. A general naming convention has been decided by HYDROUSA consortium, where the files will use the following format HYDROUSA-{File Title as in metadata}.{Version as in metadata}.{file type extension} (i.e. HYDROUSA-Leaflet.01.pdf).

The set of these data will be readily accessible through the project website without any restriction. In order to access the material of this collection, the individual conducting the search will have to find the file in the HYDROUSA website by opening the following programs:

- Adobe Acrobat Reader for .pdf files
- VLC media player for videos
- Windows Photos for images

The interested parties can access the HYDROUSA website through browsers such as Firefox, Chrome, Microsoft Edge, etc. and by going to <http://www.hydrousa.org>.

Regarding publicly deliverables (D9.1-D9.7), they are/will be saved in pdf format and then would be opened with the use of "Adobe Acrobat Reader" (free) software without any limitation.

5.2.3 Making data interoperable

It is not expected to make interoperable operations. The files of the publicly deliverables will be stored as pdf format and can only be used as a reference.

5.2.4 Increase data reuse (through clarifying licenses)

HYDROUSA Consortium has set this data collection as available for everyone to view and download as educational and informative content. Regarding the deliverables that are available to the public, the "Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International Public License" will be used so as to allow potential parties to freely use them.

5.3 Allocation of resources

The cost of this data collection has been included in HYDROUSA budget, specifically in WP9.

5.4 Data security

The data are stored on the private server, which backs up all files externally at regular intervals to ensure that the data set is safely retrieved. However, as these data are available on the project website no additional protection measures are required.

In addition, the publicly available deliverables are hosted on the server's website, following the host's security protocols. The data are stored on the private server, which backs-up all files externally at regular intervals to ensure that the data set is safely retrieved.



5.5 Ethical aspects

The personal data collected for the distribution of the e-newsletter were collected with the approval of the interested parties through the project website. In order to maintain the anonymity and confidentiality of the parties, the data are private on the server and is restricted even among the members of the consortium. Mr Zisis Tsiropoulos from the company AGENSO has been appointed as Data Protection Officer (DPO) of HYDROUSA project. According to the General Data Protection Directive (GDPR) 2016/679 he is responsible of maintaining the anonymity and distributes the file in the interested partners with caution. The SME AGENSO is a project partner and is dealing with the development of platforms for the management of data in the project. AGENSO has significant experience in the implementation of procedures for data management within existing HORIZON2020 projects.

5.6 Other

Not applicable

6 DATA SET NO 5: PERFORMANCE DATA OF HYDRO1-6

6.1 Data summary

The purpose of this data collection is to monitor and evaluate the efficiency and performance of the whole water supply chain that will be developed within HYDROUSA. The source of these data is the sensors, actuators and controllers that are installed in all of the demonstration sites HYDRO1-6.

Important parameters will be monitored and related data will be collected such as: i) the water quality parameters required for the management of water and wastewater, ii) crop monitoring and weather data for environmental monitoring and management; iii) parameters required for environmental and economic assessment (life cycle assessment and life cycle costing) such as greenhouse gas (GHG) emissions and energy consumption. In addition, data from controllers and actuators will be collected and installed at the demo sites for: controlling the water loops; achieving efficient irrigation; ensuring the smooth operation of the setting; preventing unexpected events.

The formats of the files to be generated and collected in this dataset are expected to be:

- Raw data in .csv format (semicolon separated)
- Excel files (.xlsx) for grouped (semi-processed data)

The expected file size of this data set cannot be estimated, as the data collection has just started for some of the parameters. Furthermore, it will be saved in the project's private server and accessed only by the consortium members. The operation of HYDRO1-6 dataset will be reused for investigation purposes only by HYDROUSA Consortium members.

This dataset is the most important, as based on this collection the efficiency of the HYDROUSA systems will be assessed from environmental, economic and social perspective.

From this data set, a public delivery will be developed as shown in Table 7. D5.1 will be stored on the private server in pdf format and will be available on the HYDROUSA website, where any interested party will be able to download it for free.

Table 7. Deliverable that includes performance data

Deliverable	Title	Dissemination level	Scope
D5.1	Pilot Assessment Report	Public	D5.1 is a report on the 2-year operation of all the demonstration systems. The report shall describe the operating conditions of the systems, the performance in terms of pollutants removal. The report will assess the quantities of recovered water from the different non-conventional water sources, the water quality which is obtained and the crop yields delivered. Furthermore, the report will assess any operating problems which were experienced and how these were resolved.



6.2 Fair Data

6.2.1 Making data findable including provisions for metadata

This dataset is characterized as confidential and it will be accessible only by the members of HYDROUSA Consortium. The data of this collection will be stored in a folder on the HYDROUSA private server, which will be available only for HYDROUSA partners. However, D5.1 will be saved in pdf format and will then be opened using the "Adobe Acrobat Reader" (free) software without any limitations. Any interested party will be able to locate the desired document using the site's navigation menu (www.hydrousa.org).

6.2.2 Making data openly accessible

Data set No 5 includes both confidential and public data. The confidential data will be kept on a private server by the project coordinator and only members of the HYDROUSA consortium will have access to them. However, D5.1 will be openly available and will be saved in pdf format and then be opened with the use of "Adobe Acrobat Reader" (free) software without any limitation.

6.2.3 Making data interoperable

The publicly deliverable file will be stored as pdf format and can only be used as a reference.

6.2.4 Increase data re-use (through clarifying licenses)

Regarding D5.1 that will be available to the public, the "Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International Public License" will be used so as to allow potential parties to freely use them.

6.3 Allocation of resources

The cost of data collection has been included in HYDROUSA budget, specifically in WP5 & WP1 as personnel cost.

6.4 Data security

The publicly available deliverables will be hosted on the server's website, following the host's security protocols. The data will also be stored on the private server, which will back-up all files externally at regular intervals to ensure that the data set is safely retrieved.

6.5 Ethical aspects

Not applicable (Confidential data)

6.6 Other

Not applicable (Confidential data)

7 DATA SET NO 6: TRANSFERABILITY DATA

7.1 Data Summary

The main purpose of this data set is to collect information on European, national and/or regional level on the legislative/institutional framework in order to determine both the enabling environment and institutional arrangement for the governance, regulation, funding, implementation and exploitation of the HYDROUSA water loops.

Enabling the environment is evaluated through a fitness check of the main policies in force and legal framework with the innovative aspect of the HYDROUSA solutions. Specifically, the main possible legislative gaps and barriers for the implementation of the HYDROUSA systems are evaluated.

Further, investments and financing structures are evaluated as supporting strategies for the implementation and management of innovative solutions for decentralized systems in small communities.

Local institutional arrangements in terms of regulation and compliance, regulatory bodies/enforcement agencies/local authorities as well as monitoring and evaluation bodies for water supply and sanitation services are identified.

Data collected will be used in the feasibility assessment of HYDROUSA technologies in different replication sites worldwide. The following main domains are assessed to address transferability and replicability of innovative solutions:

- Technical (indicators/information related to sizing criteria, mass flow analysis and resource requirements for evaluation of reliability, efficiency and flexibility)
- Economic (indicators/information related to Cost and Benefits Analysis, Return Of Investments and Payback Period)
- Geographic/Environmental (indicators/information related to the local environmental conditions and sensitivity such as water stress)
- Social (indicators/information related to social benefits, community needs as well as support of local stakeholders)
- Institutional/Legislative/Regulatory (indicators/information related to regulatory framework and permitting pathways).

Data are collected for each replication site by means of specific excel files (.xlsx) prepared for each HYDRO and for different fields of analysis. Further, data from different replication sites are summarized and elaborated in a word (.doc) feasibility report and PowerPoint presentation (.ppt).

The expected file size of this data set cannot be completely estimated, as data is not fully collected for all the replication sites. All deliverables will be available on the private server in pdf format.

Data used for technical feasibility include the main HYDRO design parameters and operative data. From this data set, the deliverables shown in Table 8 will be developed.

Table 8. Deliverables that include transferability data

Deliverable	Title	Dissemination level	Scope
D7.1	HYDROUSA water loops in the context of the EU and international policy (including Innovation Deal)	Public	It aims to frame HYDROUSA water loops within the context of EU directives and ongoing policy initiatives. Further, it describes possible barriers for HYDROUSA replicability.
D7.2	Guidance methodology for replication assessment	Public	It details the methodology and the local regulatory frameworks to pave the way for the following replicability assessment.
D7.3	Feasibility studies in European replication sites	Confidential	It provides feasibility and assessment studies according to the methodology described in D7.2.
D7.4	Feasibility studies in MENA replication sites	Confidential	It provides feasibility and assessment studies according to the methodology described in D7.2.
D7.5	Feasibility studies in non-European replication sites	Confidential	It provides feasibility and assessment studies according to the methodology described in D7.2.
D7.6	HYDROUSA Service including transferability and replication plan	Public	It includes the manual to HYDROUSA service to rapidly evaluate the feasibility of HYDROUSA water loops as well as simulation of the HYDROUSA service in 10 follower sites. Furthermore, it includes the transferability and replication plan that includes standardization of activities and approaches that have been validated within the HYDROUSA actions and will facilitate the replication and/or the transfer of the project results beyond the project, including other regions and countries.



7.2 Fair data

7.2.1 Making data findable including provisions for metadata

This dataset is partially confidential especially for what concerns replication site local assessment. Data will be accessible by the members of HYDROUSA Consortium. Data regarding Deliverables D7.1, D7.2 and D7.6 will be openly available in pdf format, through the project website and any interested party can access them from the navigation menu. The name convection of the data is defined as follows:

- [HYDROUSA - HYDROUSA water loops in the context of the EU and international policy \(including Innovation Deal\). pdf](#)
- [HYDROUSA - Guidance methodology for replication assessment. Pdf](#)
- [HYDROUSA - HYDROUSA Service including transferability and replication plan](#)

7.2.2 Making data openly accessible

This dataset includes both confidential and public data. Confidential data will be stored in the private server by the project coordinator and only members of the HYDROUSA consortium will have access to them. However, the public reports will be available in pdf format and can be opened by means of "Adobe Acrobat Reader" (free) software.

7.2.3 Making data interoperable

The public deliverables file will be stored as pdf format and can only be used as a reference.

7.2.4 Increase data re-use (through clarifying licenses)

As specified in the Grant Agreement the data from Deliverables D7.3, D7.4 and D7.5 is confidential; in extent, there can be no data re-use for it. The following deliverables are not confidential: D7.1, D7.2 and D7.6. The above deliverables will be openly available and can be used freely by any interested party, as two of them have already been uploaded on the HYDROUSA website (www.hydrousa.org) and for at least 5 more years after the project's duration. This way data reuse can be enhanced. The "Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International Public License" will be used for openly available deliverables to allow potential parties to use them freely.

7.3 Allocation of resources

The cost of data collection has been included in HYDROUSA budget, specifically in WP7.

7.4 Data security

The public available deliverables will be hosted on the server's website, following the host's security protocols. The data will also be stored on the private server, which will back-up all files externally at regular intervals to ensure that the data set is safely retrieved.



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7.5 Ethical aspects

Not applicable

7.6 Other

Not applicable

8 DATA SET NO 7: CIRCULARITY ASSESSMENT DATA

8.1 Data summary

The data collected in this data set will be used to create the models to evaluate circularity performance of each HYDRO as well as the whole water supply chain developed within HYDROUSA. The primary data will be obtained mainly from Data set No 5 including processed data from the sensors, actuators and controllers as well as direct user inputs from the technology providers and HYDRO leaders.

The data will be used to develop the sustainability and circularity performance models which provide the basis for the circularity and water-food-energy (WFE) nexus performance assessment. The required data for the assessment will be derived from the data acquisition and monitoring system (ICT monitoring). The analysis will provide feedback for the sustainability performance of each HYDRO as well as of the integrated HYDROUSA solution to reveal the potential for further technology innovation and optimization of the solutions.

The formats of the files to be generated and collected in this dataset are expected to be:

- Raw data in .csv format (semicolon separated)
- Excel files (.xlsx) for grouped (semi-processed data)
- Umberto files (.umberto) for circularity models

The data collected from the relevant HYDROUSA partners include:

- Initial costs (preliminary studies, permitting, design, analysis, etc.)
- Resources and costs for site preparation and construction (e.g. earthworks)
- Bill of materials/costs for the main components/sub components.
- Transportation of materials and equipment to the sites (e.g. distance to the source materials and technology providers and type of transport)
- List of the electromechanical equipment and energy requirements
- Maintenance requirements
- Labour requirements
- Operational data (both online and offline) from sensors, actuators and HMI inputs

The expected file size of this data set cannot be estimated yet, as the data are not yet collected but it depends on the nature of the raw and processed data inputs.

Two main data streams can be identified. The first one comes from LCA templates (in the form of excel documents) through which data on the general description, equipment, materials, initial costs, etc. will be collected. The latter are expected to take little space; 100-500 MB (including some graphic material). The second data stream is related to the data from the operation of the demo sites (sensors, field measurements, lab data, HMIs), which can take a larger disc space. However, the raw data will be stored in the repository of Data Set No 5 in the project's private server from where the necessary data will be queried and processed.

From this set of data, 3 deliverables will be developed as listed in Table 9. From these deliverables, D5.4, and D6.3 are confidential, while D6.1 is public. Confidential deliverables will be accessible only by members of the consortium. All the deliverables will be stored on the private server as pdf format. The public deliverables will be available on the project's website (in pdf format) freely available for download by the public .

Table 9. Deliverable that includes circularity assessment data

Deliverable	Title	Dissemination level	Scope
D5.4	Models for measuring HYDROUSA systems performance	Confidential	D5.4 is a report on the data acquisition methods and the algorithms for measuring key performance of HYDROUSA technologies, with respect to environmental friendliness of the production process, low energy consumption, production yield, and reliability of the processes, resulting into a tool for decision making
D6.1	Functional and economic indicators	Public	D6.1 is a report on the (a) selection and description of operations, environmental and economic indicators -models of the HYDROUSA. (b) Input to the European debate on circular economy financing models
D6.3	Physical and virtual nexus model	Confidential	D6.3 is a report on (a) the methodology for physical & virtual model development. (b) The model results for the physical and virtual water-energy-food nexus of HYDROUSA systems. (c) Report b) Data Valorization to help system owners' operations (plant, land, material, logistics, and water systems) optimization and operations level and to advise stakeholders and citizens on good practices and achievements of circularity

8.2 Fair Data

8.2.1 Making data findable including provisions for metadata

This dataset is characterized as confidential (which contains raw data and specific information about the technologies and life cycle inventories) and non-confidential (KPIs, circularity analysis and results). The confidential part of data will be stored in a folder on the HYDROUSA private server, which will be available only for HYDROUSA partners, while the KPIs, circularity analysis and results will be shared with the public through D6.1 in pdf format and which can be opened using the "Adobe Acrobat Reader" (free) software without any limitations. Any interested party will be able to locate the desired document using the site's navigation menu (www.hydrousa.org).



The name convection of the data determined to be given is as follows:

- [HYDROUSA - Functional and economic indicators. pdf](#)

8.2.2 Making data openly accessible

Data set No 7 includes both confidential and public data. The confidential data including raw/processed data inputs will be kept on a private server by the project coordinator and only members of the HYDROUSA consortium will have access to them. Water, energy and material KPIs will be openly available and included in D6.1. The Deliverable will be saved in pdf format and then opened with the use of "Adobe Acrobat Reader" (free) software without any limitation.

8.2.3 Making data interoperable

The public deliverable files will be stored as pdf format and can only be used as a reference.

8.2.4 Increase data re-use (through clarifying licenses)

Regarding D6.1 that will be available to the public, the "Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International Public License" will be used so as to allow potential parties to use it freely.

8.3 Allocation of resources

The cost of data collection has been included in HYDROUSA budget, specifically in WP 6, 5 & 1 as personnel cost.

8.4 Data security

The publicly available deliverables will be hosted on the server's website, following the host's security protocols. The data will be also stored on the private server, which will back-up all files externally at regular intervals to ensure that the data set is safely retrieved.

8.5 Ethical aspects

Not applicable

8.6 Other

Not applicable

9 DATA SET NO 8: EXPLOITATION DATA

9.1 Data Summary

In order to support the exploitation of results along the 6 scenarios defined with the consortium partners, various data sets used / generated and their related formats:

Table 10. Data created / used for the development of the 6 exploitation scenarios

Purpose	Tools/method	Format
Review of stakeholders' / main interests / motivations	surveys undertaken in coordination with IHA (Data set 2)	MS Word documents (.docx) and google forms for questionnaires MS Excel documents (.xlsx) that will be the result
Market potential assessment	Processing land use GIS layers with various criteria	GIS layers (shape files) – using COPERNICUS (urban atlas) and CORINE datasets
	Data extraction on WWTP to generate tables, maps and graphs	Excel files with data extracted from EU reporting data on UWW FAO Aquastat database UN Joint Monitoring Program on sanitation Eurostat
	Data extractions from eco-labeling databases	Excel files with data extracted from online databases offered by touristic eco-labels
Assessment of return on investment for end users	Economic models for 6 exploitation scenarios	MS-Excel tables
Ex-ante evaluation of carbon sequestration	Use of UN-FAO tool EX-ACT	Ms-Excel file with input data and estimated GHG emissions and carbon sequestration based on land use changes

Within the exploitation activities, data were also collected and compared on the current efforts for a circular water economy (in excel files) and combined to factsheets and a layman's leaflet (in pdf format) that are formulated and will be disturbed in events.

All data compiled or generated are integrated into 10 Deliverables (Table 11). Deliverables 8.1, 8.2, 8.7, 8.8, 8.9, 8.10 are confidential, while Deliverables 8.3, 8.4, 8.5, 8.6 are public. Confidential deliverables will be accessible only by members of the consortium. All the deliverables will be stored on the private server as pdf

format. The public deliverables will be available on the project's website (in pdf format) freely available for download by the public.

This data collection is expected to be particularly helpful for the project consortium in particular for the technology providers for future exploitation of HYDROUSA results.

Table 11. Deliverables related to data set No 9

Deliverables	Title	Dissemination level	Scope
D8.1	HYDROUSA exploitation scenarios and market size	Confidential	<p>It presents the 6 exploitation scenarios, related market segments and an estimation of its size as well as the competitive advantage of HYDROUSA.</p> <p>Data included:</p> <ul style="list-style-type: none"> resulting data on market sizing (tables, maps and graphs) resulting from the exploitation of datasets listed above information on competing technologies
D8.2	Business Plan for Exploitation	Confidential	<p>It presents the vision of the project, the proposed solutions (HYDROs), marketing pathways, the economic model (costs and revenues), socio-economic, legal and technical constraints and recommendations to overcome them.</p> <p>Data included:</p> <ul style="list-style-type: none"> economic models for each exploitation scenario (6 in total): CAPEX, OPEX, revenues, yield, productivity, payback period carbon sequestration ex-ante estimation sales forecasts

D8.3	Replicability and associated funding mechanisms	Public	It presents financing mechanisms that can support further exploitation of HYDROUSA and faster deployment for the targeted replication sites. It will integrate additional and follow-up funding, financing and/or investment opportunities and mechanisms, adapted to different relevant European countries and regions and in general regarding the European Regional Development Fund (ERDF). It will also include blended instruments like NCFF (Natural Capital Financing Facility), InnovFin (EU Finance for innovators), the PRIMA Initiative; as well as alternative financing mechanisms through: municipalities, community involvement (crowd-financing), institutional investors (World Bank, ethical banks, sustainable pension funds), private investors (venture capital donors), and infrastructure/energy/water utility organisations.
D8.4	Marketing activities	Public	It describes and assesses all the different marketing activities performed throughout the project (WP8) and their links to the Communication activities carried out under WP9. The achievement of objectives are reviewed and all the marketing supports prepared (factsheets, survey) are provided.
D8.5	Evidence matrix of circular economy facts and policy brief for use in WP7, WP8 and WP9	Public	This report brings together all current efforts with brief descriptions and links for a more circular water economy, showing barriers and possible ways to overcome them. It is meant to support all partners of the project for having a strong evidence base together with a policy brief to rely on for any further interaction with stakeholders

D8.6	Circular economy factsheet, layman's leaflet and basis for education material	Public	Based on the research for the evidence matrix in D8.6, factsheets and layman's leaflet are formulated as well. The circular economy layman's leaflet is the dissemination material for the broader community that can be used at all events and can even be distributed through further stakeholders. It should ease a basic understanding for a transition towards circular economy. This information should be spread with the support of all local partners.
D8.7	Evaluation report for the eco-tourist business case	Confidential	It provides a further analysis on the ecotourism and agroforestry business cases (included on D8.1) when integrated together. It includes possibilities and limitations of a small scale collaborative network, the business opportunities which arise from direct marketing, low impact, high density and high diversity. The water loops within small eco-tourist facilities are analysed and displayed.
D8.8	Report on ETV activities	Confidential	This deliverable consists of a report on ETV results and activities, which were undertaken for selected HYDROUSA technologies. It includes a short description of the ETV procedure, the selection of the performance claims for selected HYDROUSA technologies, the quick scan with and its evaluation from the verification body and a description of the methodology and results undertaken for the systems which passed the quick scan.

D8.9	Final HYDROUSA exploitation scenarios and market size	Confidential	It describes and evaluate the opportunities for exploitation of the HYDROUSA services and sets the priorities for the market introduction, updated with the results after the full operation of the HYDROs. It includes at least 6 business cases (market size, competitors, constraints and enabling environment) based on a common circular economy framework: agroforestry, Mangrove still, ecotourism, constructed wetlands, UASB with biogas, and rainwater harvesting.
D8.10	Final business plan for exploitation	Confidential	This report presents the adaptive business model covering the elements presented at the canvas business model, the cost structure and the exploitation strategy. Based on the updated market sizes estimations (D8.2), at least 5 business exploitation scenarios are defined with cost and revenue estimations as well as investment requirements to address the different market segments identified.

9.2 Fair Data

9.2.1 Making data findable, including provisions for metadata

All data collected and generated for exploitation are confidential and stored on a SEMIDE private server with a backup facility. Exploitable data for the consortium are shared and will be stored on a private server by the project coordinator. They are mainly the economic models for each exploitation scenario. The naming convention is as follow:

- [HYDOxx_Eco_Vyy.xlsx](#)

Where,

- xx represents the exploitation scenario number
- yy represents the version number

The files contain for each data item its unit and a comment field explaining the hypothesis/calculation method and source of data.



As described above, some of the deliverables (D8.1, D8.2, D8.7, D8.8, D8.9 and D8.10) that will be developed from this dataset will be confidential and will be stored on a private server by the project coordinator. Only members of the consortium will have access to these data. However, public deliverables of this dataset D8.3, D8.4, D8.5 and D8.6 will be saved in pdf format and will then be opened using the "Adobe Acrobat Reader" (free) software without any limitations. Any interested party will be able to locate the desired document using the site's navigation menu (www.hydrousa.org).

9.2.2 Making data openly accessible

Data set No 8 includes both confidential and public data. The confidential data will be kept on a private server by the project coordinator and only members of the HYDROUSA consortium will have access to them. Openly available data will be saved in pdf format and then opened with the use of "Adobe Acrobat Reader" (free) software without any limitation.

9.2.3 Making data interoperable

The public deliverable files will be stored as pdf format and can only be used as a reference.

9.2.4 Increase data reuse (through clarifying licenses)

Regarding D8.3, D8.4, D8.5 and D8.6 that will be available to the public, the "Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International Public License" will be used so as to allow potential parties to use it freely.

9.3 Allocation of resources

The cost of this data collection and production for exploitation is included in HYDROUSA budget. SEMIDE as leader of exploitation activities (WP8) will securely archive the datasets listed above on its servers and backup facility after the end of the project.

9.4 Data security

The publicly available deliverables will be hosted on the server's website, following the host's security protocols. The data will be also stored on the private server, which will back-up all files externally at regular intervals to ensure that the data set is safely retrieved.

9.5 Ethical aspects

The data obtained from the results of the questionnaires may include personal information of respondents but are not made public. In order to maintain the anonymity and confidentiality of the respondents, the results of the questionnaires will be private on the server and will be even limited among the members of the consortium. Mr Zisis Tsiropoulos from the company AGENSO has been appointed as Data Protection Officer (DPO) of HYDROUSA project. According to the General Data Protection Directive (GDPR) 2016/679 he is



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responsible of maintaining the anonymity and distributes the file in the interested partners with caution. The SME AGENSO is a project partner and is dealing with the development of platforms for the management of data in the project. AGENSO has significant experience in the implementation of procedures for data management within existing HORIZON2020 projects.

9.6 Other

Not Applicable