**Annex 5**

**Templates for Mid-Term Evaluation Report**

**(Individual and Consensus)**

**Water Joint Programming Initiative**

**2018 Joint Call**

*Closing the water cycle gap - Sustainable management of water resources*

These Project Management Guidelines will be effective from the date of the National funding decisions and shall remain in force until the last final project report is approved in 2022.

**The Mid-Term Consensus Report will be made available to the Consortium as well as CSC and JPI Water GB.**

**MID-TERM INDIVIDUAL EVALUATION REPORT**

**PROJECT TITLE AND ACRONYM**

MANAGED AQUIFER RECHARGE: ADDRESSING THE RISKS OFRECHARGING REGENERATED WATER (MARAdentro)

Name of Coordinator: Silvia Diaz Cruz

Project code: WaterWorks2017-MARAdentro

Duration of project: 36 months

Start date: 17/05/2019End date:16/05/2022

**DETAILS OF THE EVALUATOR**

Name: Olga Covaliova

Organisation: Institute of Chemistry, Republic of Moldova

Date of review: 09/04/2021

### **Scientific and technological progress** (*Maximum 250 words)*

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| *An impressive progress has been achieved regarding the scheduled objectives and milestones, in spite of several obstacles and delays. For instance, delay appeared in field and laboratory work because of Covid 19 pandemic. As regards to WPs implementation, the planned tasks under WP1, WP2, WP8 were completed according to plan, whereas activities under WP3, WP 4, WP 5 are on-going or delayed. Literature search was performed. Despite pandemic, methodology for batch experiments was established and validated. More than 200 batch experiments were performed to test the sorption capacity of different materials with regard to studied water pollutants. Pilot field tests were started with water recharge with 0,4 m/d infiltration rate. Some system improvements implemented. For field MAR technology testing, best location for field scale prototype installation was identified, terrain adaptation measures taken. Conceptual model to assess some important factors was designed and verified to produce basis for numerical models (the factors include redox processes, role of biomass as sorbent for organic pollutants, impact of compost material, etc.). Multi-disciplinary work was broadly applied in all types of activity, including data mining, selection of materials to be tested as barrier components, selection of indicator microorganisms to be monitored. There was joint participation in column experiments, field sampling. Dissemination activity was on good level: 4 published papers, 3 submitted, participation in conferences (4 oral and 3 posters), end-users meetings, lectures on MAR, 3 master theses and 5 PhDs on-going, models and softwares developed.* |

### **Collaboration, coordination and mobility within the Consortium** (*Maximum 250 words)*

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| *Current project practically represents a continuation of previous long-term collaboration of partners. Many tasks have been performed with collaborative efforts during the reporting period. Some laboratory works and field samplings were performed by students from different participating institutions. The mobility was affected. A total of 5 consortium meetings were held, 3 of them in Madrid, Montpellier and Barcelona and 2 virtual meetings. Project meets transnational nature.* |

### **Coordination with other international project funded by WaterWorks2017, or other instruments** (*Maximum 250 words)*

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| *There was a coordination with the international project funded by WaterWorks 2017: UrbanWat (CNRS, CSIC involved). In addition, there is collaboration with Spanish Project ROUSSEAU devoted to the reuse of regenerated water in irrigation, and Catalonian Project RESTORA devoted to use of organics to accelerate water renaturalization.* |

### **Coverage of the themes and sub-themes of the call** (Maximum *250 words)*

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| *The project results are related to the following themes of the Call:*  *Theme 1. Enabling sustainable management of water resource, Sub-themes 1.2. Integrative management by implementing Natural Water Retention Measures (NWRM) such as Managed Aquifer Recharge (MAR);*  *Theme 3. Supporting tools for sustainable integrative management of water resources.* |

1. **Stakeholder/industry engagement** (*Maximum 250 words)*

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| *C*ooperation has been established with following agencies and actors in the field:   * *Catalan Water Agency (under RESTORA Project);* * *Consorcio Costa Brava – formal agreement signed, supporting work with Palamos WWTP;* * *COMAIGUA S.L. – company dealing with integrated water cycle;* * *Mejoras Energetics S.A.Company* * *Consorci Besos-Tordera.* |

### **Recommendations for improvements/amendments of the report** (Please complete Table below)

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1. **Recommendations/ problems and risks** (Maximum *250 words)*

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| *The main problems that affected the project implementation activities were: Covid 19 pandemic and lack of active funds at national level in case of the partner from Italy. In addition, Project Coordinator from IRSA-CNR have been substituted, and final acceptance was not received. As mentioned by the Project Consortium, one of the most efficient measures to completely reach the project milestones and deliverables, would be requesting for the Project period Extension for several months.* |

**MID-TERM EVALUATION CONSENSUS REPORT**

**This Consensus Report will be made available to the Consortium as well as CSC and JPI Water GB.**

**PROJECT TITLE AND ACRONYM**

Name of Coordinator:

Project code: WaterWorks2017-CONSORTIUM ACRONYM

Duration of project:

Start date: End date:

**FOLLOW-UP GROUP**

Please include the data of the FG members reviewing the report

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| Name | Organisation |
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### **Scientific and technological progress** (Maximum *250 words)*

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| *Please describe the work performed and the results obtained during the lifetime of the project, and the conformity of work progress within the initial schedule. Take into account the following aspects:*   * *Has progress been achieved towards reaching the project objectives according to the original description and milestones?* * *Detailed update on methodology & results* * *How has the progress of the project promoted a multi-disciplinary work?* * *Dissemination of the results (publications, patents, other)* |

### **Collaboration, coordination and mobility within the Consortium** (Maximum *250 words)*

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| *Please evaluate the collaboration, coordination and mobility within the Consortium*  *Take into account the following aspects:*   * *Efficiency on the coordination and organization of the projects* * *Collaboration effective between the partners* * *Mobility of the research between the consortia* * *Does the project meet the transnational nature and its added value?* |

### **Coordination with other international project funded by WaterWorks2017, or other instruments** (Maximum 250 *words)*

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| *Please evaluate the external collaboration of the Consortium*  *Take into account the following aspects:*   * *Collaboration effective with other projects funded under the 2018 Joint Call:* * *Collaboration effective with other projects or consortia.* |

### **Coverage of the themes and sub-themes of the call** (Maximum 250 words*)*

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| *Please evaluate relation within the project results and the themes and the sub-themes of the call.*  *Theme 1. Enabling sustainable management of water resources.*  The overall aim for this theme is to develop new governance and knowledge management approaches.   * *Sub-theme 1.1. Promoting adaptive water management for global change:*   The aim of sub-theme 1.1 is to increase knowledge and to develop evidence-based methodologies and technologies for monitoring the cumulative impacts of human activities and climate change on the water cycle, but also to develop management options on the water cycle (considering all cycle compartments) and water / ecosystem services. This knowledge must be applicable for the adaptive management of water resources on a regional scale, while enabling downscaling to address local or catchment situations.   * *Sub-theme 1.2. Integrative management by implementing Natural Water Retention Measures (NWRM) such as Managed Aquifer Recharge (MAR):*   The aim is to increase the knowledge and develop NWRMs such as MAR in a multidisciplinary way, to protect, prolong, sustain and augment freshwater supplies. Evidence of their effectiveness and on the multiple benefits they deliver should be demonstrated.   * *Sub-theme 1.3. Mitigating water stress in coastal zones and urbanized areas:*   The aim is to develop and demonstrate a comprehensive coastal zone management system based on monitoring and modelling to ensure the provision of freshwater security under a range of conditions including saline intrusion, sediment management, storms, floods and droughts, but also specific coastal water uses. Please, refer to H2020 calls on nature-based solutions to propose complementary actions.  *Theme 2. Strengthening socio-economic approaches to water management.*  The overall aim of this theme is envisaging education and communication initiatives to raise social awareness of consumption habits and water scarcity and to increase the levels of social acceptance and use of recycled water.   * *Sub-theme 2.1. Integrating economic and social analyses into decision-making processes:*   The aim is to increase the knowledge the effectiveness and efficiency of existing economic mechanisms and policy instruments related to water management, with a special emphasis on implementation of water policies (such as the EU Water Framework Directive) and development of a circular and green economy. The approach should aim to break boundaries between services valuation including more flexible pricing and charging mechanisms, management tools and institutions, and the employment of economic and social sciences to develop best practice management guidelines for efficient water uses, including under extreme events such as droughts and floods.   * *Sub-theme 2.2. The reuse of water:*   The aim is to develop integrative methods and cost-effective technologies for the implementation of acceptable and sustainable solutions on a large scale for different reuse cycles, spanning from irrigation, via livestock drinking water, to human consumption. Furthermore, goals include assessments of social acceptance for the use of recycled water and the development of integrated approaches combining technological solutions with social-psychological acceptability, economic viability and appropriate governance approaches. Research into the removal of emerging contaminants must consider the cost of the technology vs yield and realistic options for reuse of the recovered water. Please refer to projects funded under previous Water JPI Joint Calls (2013, 2015 and 2016) to avoid any duplication. See Joint Calls on Water JPI website.   * *Sub-theme 2.3. Connecting science to society:*   The aim is to increase understanding of the role of socio-economic approaches to water uses in hydrological cycles. Knowledge building should address stakeholders' and public awareness of water challenges and values, and how perception of policy measures and technological solutions are formed and how stakeholders can be steered towards desirable behaviour. Local and/or regional context (attitude, social norms, cultural context, etc.) should be taken into consideration. The value of improved water stewardship overall should be considered by developing sustainable business models.   * *Sub-theme 2.4. Promoting new governance and knowledge management approaches:*   The aim is to develop innovative water management tools and approaches suitable for decision-making based on an analysis of the limitations of current practices. These approaches should involve the broad participation of stakeholders (including public monitoring, communication and education), multidisciplinary research, and short and long-term water cycle scenarios to support decision-making and the integration of water policy into other policy fields. In effect, governance capacities for implementation of water policies at the local and regional levels should be enhanced.  *Theme 3. Supporting tools for sustainable integrative management of water resources.*  This theme aims to complement the actions developed under the European Strategy Forum for Research Infrastructures (ESFRI) and other European initiatives. Emphasis should be on establishing networks and information sharing among existing research facilities/field labs, analytical methods, monitoring tools and programmes, access to databases and platforms, exploring the use of big data solutions and establishing reliable hydrological standards. Across the globe, there is a large body of knowledge, methodology and data related to hydrology and the water cycle that has the potential of being beneficial for a wide range of the world's regions. The alignment of water-related research and sharing of data and results will serve to avoid duplication of research, support progress based on previous finding, and thus facilitate the establishment of water management policies addressing rapid climatic changes. |

1. **Stakeholder/industry engagement** (*Maximum 250 words)*

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| *Please evaluate the participation of stakeholders/industry on the project and the added value of this participation.* |

### **Recommendations for improvements/amendments of the report** (Please complete Table below)

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1. **General Assessment Comments** (*Maximum 250 words)*

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| *Please include a summary of the key points of this evaluation.*  *Problems identified or specific risks to the projects. As well recommendations/feedback, which could be relevant to the Consortium.* |