**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**

“SUSTAINABLE TECHNOLOGY FOR THE STAGED RECOVERY OF ANAGRICULTURAL WATER FROM HIGH MOISTURE FERMENTATIONPRODUCTS” (RECOWATDIG)

Name of Coordinator: Halina Pawlak-Kruczek

Project code: WaterWorks2017-RECOWATDIG

Duration of project: 36 months

Start date: 01/04/2019End date: 31/03/2022

**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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| *During the reporting period the work has been performed in line with 6 WPs out of 9. WP1: Additional mitigation plan was developed, Milestones M1.1 and M1.2. achieved. WP2: the aim was to define optimal parameters of pressure membrane process for 2 kinds of wastewater. M2.1 was achieved, M 2 2 – close to be achieved, characterization of condensate after drying needs to be done. Laboratory setup for chemical coagulation/precipitation process was prepared, process diagram, mass and energy balance for biogas plant made. Although, analysis of digestate from municipal biogas plant is still in progress. Multistage purification of digestate was delayed as wet digestate was just received. WP3: study of hydrothermal carbonization processes was started on a bench scale, in order to produce highly porous sorbent. Optimization of hydrothermal process of digestate dewatering was delayed. M3.1., M3.2 were achieved, although M3.3. needs to be finalized. WP4 and WP 5: characterization of physical, structural and chemical properties of hydrochars produced from digestate was done. WP6: the research of using the by-products of water recovery and purification was focused at pyrolysis of hydrochars. Mitigation plan has bee elaborated to overcome difficulties caused by Covid 19 pandemic. Multidisciplinary work: tests were performed in different areas, including membrane processes, precipitation/coagulation, hydrothermal carbonization, etc. Dissemination: papers in peer-reviewed journals – 5, manuscripts – 5, conference communications – 8, 1 Booklet published.*  |

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

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| *Four Consortium meetings were held, two of them online. Several joint publications in research journals and joint conference communications are to be mentioned. Collaboration also involved sending the samples, exchanging knowledge and experience, interpretation of experimental results. One Ph.D student and one MS student from Wroclaw University of Science and Technology and had internships in University of Twente. are participating in mobility programs under Erasmus + Programme. Project meets the transnational nature and demonstrates added value due to collaboration.*  |

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

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| *There is no collaboration effective with other projects funded by WaterWorks2017, nor with other projects mentioned.*  |

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

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| *The Project is related to the following themes and sub-themes of the Call: Theme 2. Strengthening socio-economic approaches to water management. Sub-theme 2.2. The reuse of water: and Theme 3. Supporting tools for sustainable integrative management of water resources.* |

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

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| *A key user – ZGO Gac Company – was involved in Project activity, providing the samples and necessary data for further research.*  |

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

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| **Page** | **Modification** | **Rationale for change** |
| Page 5. The phrasing: ”The proposed technology guarantees the recovered water will be safe”. | The requirements towards the irrigation water quality are not mentioned elsewhere in the Project Proposal and Mid-term report. To my opinion, such requirements should be specified, if not as a quantitative water quality indicatorsw, then at least as a reference to some Official document specifying the necessary vater indicators to be reached. In this context, the authors should demonstrate that the final purification degree of treated waters will be safe in using for irrigation of certain types of crops. | Safe using of treated water streats for irrigation of specific crops in agriculture.  |
|  | Of course, economic assessment of the proposed several-stage treatment technology should be performed, to consider its practical applications.  | Importance of the cost-effective treatment technology.  |
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1. **Recommendations/ problems and risks** (Maximum *250 words)*

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| *As the Covid 19 pandemic is a force-majeure, it could be recommended that the Project Consortium prepare the request for Project extension, to be able to completely perform all the scheduled tasks.*  |

**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)*
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### **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?*
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### **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.*
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### **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.*  |