|  |
| --- |
| **Descriptive form** |
| **Program name**  | HORIZON-CL6-2023-CLIMATE-01-2 |
| **Call module** | HORIZON-CL6-2023-CLIMATE-01-2: Improve the reliability and effectiveness of alternative water resources supply systems and technologies |
| **Website of program** | https://ec.europa.eu/info/funding-tenders  |
| **Project name** | Analysing Rainwater Harvesting System to Reduce Climate Change Vulnerability |
| **Project duration** | Max 36 months  |
| **Aim of project** | This project has three objectives. First, to create an alternative water supply for urban uses especially during dry periods, and second, to build adaptation measures to reduce potential flooding. Third, to present policy implications of implementation of rainwater harvesting systems. The challenges of the project are determining the water quality of the rainwater that will be continuously collected from the roofs, reusing it after a suitable compact treatment process, and decreasing the discharge and the load on wastewater treatment plants by including this wastewater in the sewerage system after use. Overall, this project aims to reduce urban climate vulnerability through promoting rainwater harvesting with a holistic management system by addressing its potential challenges. |
| **List of partners and a brief explanation of their role in the project** | 1. Boğaziçi University
2. Istanbul Water and Sewerage Administration (ISKI)
3. Turkish Water Institute (SUEN)
4. Potential Partner-1
5. Potential Partner-2
6. Potential Partner-3

In this project;Boğaziçi University will take part in the scientific research part, and will be responsible to conduct research and evaluate results of the pilot rainwater harvesting system as the Turkish partner of a Horizon project. ISKI will provide support to the project in terms of providing the required space for research activities at the selected rainwater collection fieldSUEN will be partnering in analyzing the policies and strategies on water harvesting in pilot sites and capacity development activities, contributing to policy improvement/development in enhancing the circular economy concept, as well as dissemination of project outcomes.  |
| **The expected role ofthePotential Partner-1** | The potential partners that will be responsible for the main activities under this project will be:Consortium coordination and administrative management.Technical management.Data management plan (VYP).Risk management and quality assurance. |
| **The expected role of the Potential Partner-2** | The potential partner will be responsible for the development, production and installation of different types of rainwater harvesting systems and propose a rainwater harvesting prototype for the project. |
| **The expected role of the Potential Partner-3** | The potential partner will be responsible for innovative sensor, monitoring systems and AI-based decision support systems |
| **The expected role of the Potential Partner-4** | The potential partner will be responsible to taking an innovative approach to PV Systems |
| **Brief Information About the Project** | Istanbul, has to bear significant amounts of storm water that often jeopardizes its sewer system during heavy rains. Intense precipitation might fill and block the stormwater collection canal system, which then result in rain water floods in the streets and public health risks. For decreasing the damages caused by heavy precipitation and creating additioanl water supply, rainwater harvesting systems (suitable roofs, filters, rainwater tanks/cisterns, plumbing to toilette reservoirs for indoor rainwater use etc.) should be built wherever possible. Rainwater harvesting systems also help reduce overall electricity consumption through replacing electricity needed for pumping water with the force of gravity. Collected rainwater is then available for consumption during dry seasons when there is shortage of mains water. The main objectives of this project are as follows:* To determine the rainfall characteristics of the area
* To calculate the rainfall discharge
* To find the rainwater potential and its relation with groundwater
* To calculate the runoff from different surfaces according to land use and find out the number of recharging structures needed for the area
* To calculate different water needs for different purposes in the area
* To define different types of rainwater harvesting systems and propose a rainwater harvesting prototype
* To implement the rainwater harvesting system as a pilot case
* To monitor the rainwater tanks with sensor system
* To develop decision support systems for evaluating how and where rainwater harvesting system should be built.
* To integrate PV Technologies as a renewable energy source for the sustainable operation of the rainwater harvesting system

This study is designed, in paralel with the European Green Deal and the EU's water-related policies, to create an alternative water supply for combatting water scarcity in dry periods and to promote adaptation of water resources to changing climate. Accordingly, the project is fully compliant with Sustainable Development Goals 6 and 13 (SDG 6 and SDG 13), as it creates an alternative clean water source during droughts and provides a solution to potential flood risks. This project will provide a sustainable solution to the problems related to increasing water demand, urban floods and energy consumption with the implementation of the rainwater harvesting system wherever possible in the city. |
| **Profiles of partners for carrying out the proposed activities** | **Boğaziçi University (BOUN)**Founded in 1863 Boğaziçi University is one of the leading institutions of higher education in Turkey. The "World's Best Universities" ranking 2020 data prepared by the US News & World Report site announced Bogazici University to be the 186th university, the only university in Turkey to be among the top 200 with the title of "Best Global University". BOUN, was also the 21st university among the 590 universities evaluated among Asian universities, including countries such as China and South Korea, in 2020. BOUN includes 6 main campuses with an overall surface area of almost 1.82 million m2. The university has 6 faculties, 2 schools, 6 institutes, 32 research center and 159 research laboratories, covering 35 undergraduate, 67 graduate and 33 PhD programs. A total of 1,767 staff includes 438 full-time faculty members, 150 instructors, 91 foreign lecturers, 283 research assistants and 805 administrative personel. 12,912 students enrolled in undergraduate programs, 3,321 students enrolled in graduate programs summing up to 16,233 students and 2,618 graduates. Under the 562 agreements made with the world universities, approximately 400 foreign students from 41 countries visit BOUN. The principal areas of research of the Institute of Environmental Sciences (IESc) in BOUN, are socio-ecological sustainability assessment, pollution monitoring and modelling, water and wastewater treatment technologies, urban waste management, renewable energy, and molecular and microbial ecology and system dynamics modelling of social and ecological systems, environmental governance and ecological economics.**Istanbul Water and Sewerage Administration (ISKI)**Founded in 1981 with the launch of ISKI Law No. 2560, ISKI is a public utility of Istanbul Metropolitan Municipality with an independent budget. The managerial board of the administration, where the Mayor of Istanbul is the Board Chairman, is the Metropolitan Municipality Council. The General Director of ISKI is elected upon the proposal of the Metropolitan Municipality Mayor and approved by the Minister of Interior Affairs. The General Director of ISKI also acts as the Vice Chair of the Management Board that also includes 4 members including a senior Deputy General Director. Two inspectors elected by the ISKI General Board (Municipal Assembly) conduct inspection services. The administration includes 5 Deputy General Director Offices, Department of Inspection Committee, Legal Advisor’s Office, Internal Auditing Unit, 20 Departments and 104 Directorates. A total of 9,905 staff includes 7,100 workers and 2,805 officers with a majority of technical background. To receive ISKI’s services, water and wastewater subscription is required through a contract with İSKİ. Water consumption is identified and measured via mechanical or smart meters. Contracts are classified according to the consumer groups of households, businesses, public institutions, industrial locations, village settlements and offices as well as municipal buildings.**Turkish Water Institute (SUEN)** SUEN is a governmental body established under the Ministry of Agriculture and Forestry. Working as a national think tank, SUEN develops national water policies, provides consultation to decision makers, coordinates among several water related organizations and institutions and enhances scientific research and strategic ideas with a focus on creating a common platform for water management. SUEN works in cooperation with national and international water-related institutions through the exercises on sustainable water management, developing water policies, sustainable energy issues and capacity building activities for solving local and global water problems. In this scope, SUEN has a close collaboration with the World Water Council, the Organization for Economic Co-operation and Development (OECD), the Organization of Islamic Cooperation (OIC), the Blue Peace Initiative in the Middle East, the Developing Eight Countries (D-8), the United Nations Economic Commission for Europe (UNECE), the Union for the Mediterranean (UfM‎), the International Water Resources Association (IWRA), the UN Environment Programme Global Wastewater Initiative (GW2I) and Water JPI. SUEN participated as a partner in several EU funded projects: WATERMED 4.0 (PRIMA, 2019-2022), AgriNuPes (ERA-NET CoFund, 2017-2020), WatEUr (CSA, 2013-2016), WaterWorks2014 (ERA-NET CoFund, 2014-2020), WaterWorks2015 (ERA-NET CoFund, 2015-2021), as well as national initiatives. |