TC Document

I. Basic Information for TC

• Country/Region:	URUGUAY
• TC Name:	Arsenic management improvement in water supply systems
• TC Number:	UR-T1274
• Team Leader/Members:	Rezzano Tizze, Nicolas Guillermo (INE/WSA) Team Leader; Basani, Marcello (INE/WSA) Alternate Team Leader; Bachino, Federico (CSC/CUR); Brusa, Federico (CSD/CCS); Crespin Villatoro, Leslie Alexandra (INE/WSA); Guiza Ceron, Carlos Andres (INE/WSA); Machado, Kleber B. (INE/WSA); Maria Eugenia De La Pena (INE/WSA); Sasaki, Keisuke (INE/WSA); Verissimo Da Silva, Carolina (LEG/SGO) Alternate Team Leader; Bachino, Federico (CSC/CUR); Brusa, Federico (CSD/CCS); Crespin Villatoro, Leslie Alexandra (INE/WSA); Guiza Ceron, Carlos Andres (INE/WSA); Machado, Kleber B. (INE/WSA); Maria Eugenia De La Pena (INE/WSA); Sasaki, Keisuke (INE/WSA); Verissimo Da Silva, Carolina (LEG/SGO)
• Taxonomy:	Client Support
• Operation Supported by the TC:	
• Date of TC Abstract authorization:	15 Dec 2021.
• Beneficiary:	Administración de las Obras Sanitarias del Estado (OSE) of the Oriental Republic of Uruguay
• Executing Agency and contact name:	Inter-American Development Bank
• Donors providing funding:	Japan Special Fund(JSF)
• IDB Funding Requested:	US$500,000.00
• Local counterpart funding, if any:	US$56,000.00 (In-Kind)
• Disbursement period (which includes Execution period):	24 months
• Required start date:	April 2022
• Types of consultants:	Firms and individuals
• Prepared by Unit:	INE/WSA-Water & Sanitation
• Unit of Disbursement Responsibility:	CSC/CUR-Country Office Uruguay
• TC included in Country Strategy (y/n):	y
• TC included in CPD (y/n):	y
• Alignment to the Update to the Institutional Strategy 2010-2020:	Environmental sustainability; Institutional capacity and rule of law; Productivity and innovation

II. Objectives and Justification of the TC

2.1 The main objective of the Technical Cooperation (TC) is to develop innovative tools to allow the implementation of public policies and solutions aligned with the Sustainable Development Goals in Uruguay, with a focus on planning the necessary investments for the management of arsenic in the existing supply systems (including the management processes by-products).

2.2 Uruguay was one of the first countries in the world to incorporate access to drinking water and sanitation as a fundamental human right at their constitutional level. 95,2% of its population has access to drinking water through water supply networks; 4,2% has access through improved water sources and 0,5% access water sources from unprotected wells, cisterns and / or pipes. Approximately 6% of the country's schools

still do not have a drinking water supply. More than 350 million cubic meters (m^3) of drinking water are produced annually, 90% come from surface sources and 10% from groundwater sources.[1]

2.3 Throughout the country, the provision of potable water services through networks is carried out by the state's utility Administración de Obras Sanitarias del Estado (OSE)[2], which is also in charge of providing sanitation services (except in Montevideo, where the Municipality is in charge of the sanitation service).

2.4 The country faces the following challenges: 1) reduction of non-revenue water, which at the national level surpasses 50%; 2) the universalization of the potable water service, especially considering the small nuclei of houses and rural schools; and 3) the capacity to guarantee drinking water quality as well the redundancy of sources, considering critical issues in the purification systems and supply to the population (e.g., emerging pollutants).

2.5 Based on the recommendations of the Drinking Water Quality Guidelines of the World Health Organization (WHO) and the United States Environmental Protection Agency (EPA), and through the UNIT 833-2010 standard and a decree[3] of the Executive Power, in 2011 Uruguay established stricter values for arsenic, a potentially carcinogenic chemical element that is found in water naturally and is not the product of human contamination. In this regulation, the maximum limit of 50 micrograms of arsenic per liter of water was lowered to 20 micrograms (that is, 0.02 milligrams) per liter, and a horizon of 10 years was set to reach the maximum limit of 10 micrograms (0.01 milligrams) per liter.

2.6 Despite the new regulations, currently in Uruguay there are 163 places, including 287 boreholes, 50 small-populated centers, and about 136,000 inhabitants (4% of the population), where arsenic concentrations are higher than 10 micrograms per liter. Therefore, a national strategy on arsenic removal is needed which will identify financing and institutional strengthening actions to ensure successful implementation in the medium-long period, to fulfill the obligations set by the new water quality standards.

2.7 The operation is consistent with the Second Update of the Institutional Strategy (UIS) 2020-2023 (AB-3190-2) and is directly aligned with the development challenge of Productivity and innovation, by promoting cutting edge innovative applications in the water sector. The TC is also aligned with the cross-cutting themes of: (i) Institutional Capacity and the Rule of Law, since the operation will support the strengthening of the OSE by training and building capacities among its staff; and (ii) Climate Change and Environmental Sustainability, by offering integrated solutions that address obstacles to sustainable growth.

2.8 The operation is aligned with the IDB Group Country Strategy with Uruguay 2021-2025 (GN-3056), and with the priority area of equity and social inclusion, which among other things promotes comprehensive actions on sanitation and drinking water to achieve higher levels of sustainability. In particular this TC will finance the development of rigorous baseline studies and the designs of projects that will allow the development of public policies to increase water security in the country, hence improving the quality

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[1] OSE. (2018b). Reporte de sostenibilidad 2018.
[2] Entity created by Law No. 11907, published on 01/09/1953.
[3] http://archivo.presidencia.gub.uy/sci/decretos/2011/11/msp_291.pdf

of life of its inhabitants. The operation also complements other operations in the region on arsenic removal, such as AR-L1345. Additionally, it is aligned with the Bank's Corporate Results Framework document, through its Social Progress Index and Government Effectiveness indicator. The TC is also consistent with the institutional priorities set in Vision 2025 (AB-3266): Reinvest in the Americas, through its second and third medium-term strategic goals which involve (i) ensuring access to and quality of public services; (ii) investment in human capital to increase productivity; and (iii) strengthening good governance and institutions.

2.9 This TC is aligned with the first line of action for the IDB Group in the water and sanitation sector defined in the Water and Sanitation Sector Framework Document (SFD, GN-2781-13), aimed at promoting universal access to quality water and sanitation services with equity, inclusion, and affordability, and the fifth line of action involving the drive of innovation in the water and sanitation sector.

2.10 Finally, the TC is aligned with Amended and Restated Agreement dated March 24, 2021 between the Government of Japan and the IDB for the Establishment of the Japan Special Fund (JSF), as it provides technical assistance for the benefit of a development member country of the Bank (in this case, Uruguay), as per the requirement stated in the Agreement's Article 2 (a) (i). The TC is also aligned with the Operational Guideline of the JSF, as its eligible TC type is defined as policy and strategy formulation/implementation activities and the TC supports the formulation and implementation of an action plan for arsenic management improvement in water supply systems. The TC's capacity building activities will highlight Japanese experience in water supply treatment processes and will give visibility to Japanese assistance.

III. Description of activities/components and budget

3.1. **Component I. Prioritization and action plan.** This component aims to improve the capabilities of the national operator OSE to prioritize interventions to guarantee arsenic removal from the water supply systems. It will finance baseline studies on the arsenic situation in different supply systems. Each system will be categorized, and typologies will be created to facilitate its analysis. An arsenic management proposal will then be developed for each typology (including by-products management). A technical, environmental, and social analysis of alternatives will be carried out to select the optimal solution involving minimum risk, economic cost of the investment and the operation and maintenance as selection criteria. Based on the previous analysis, an action plan will be developed to include the works to be carried out, prioritization, staging and impacts.

3.2. **Component II. Feasibility Studies, design, and capacity building.** This component will improve the capabilities of the national operator to address the presence of arsenic in water supply systems, by improving infrastructure design and capacity building. Based on the results of the studies financed under Component I, and to facilitate proper planning of public policies for the management of arsenic in drinking water systems, feasibility studies and advanced designs of prioritized works will be financed. The studies will analise the possibilities of adopting an innovative removal technology that has never been used in the country, based on the concept of adsorption, technical specifications and procurement documents will be developed to facilitate the bidding processes. This Component will also finance monitoring and supervision and training activities to build capacities on arsenic removal techniques in the Drinking water area of OSE.

3.3. The amount of financing required to achieve the expected results are presented in the Indicative Budget table below. The total cost of this TC will be US$556,000. The Bank with resources from the JSF will finance US$500,000. In-kind counterpart funding from OSE is estimated at $56,000, which will correspond to OSE staff dedication to the project.

Indicative Budget (US$)*

Component	JSF Funding	Counterpart Funding	Total Funding
Component I. Diagnostic, prioritization, and action plan	50,000	6,000	56,000
Component II. Feasibility studies, design, and capacity building	450,000	50,000	500,000
Total (US$)	**500,000**	**56,000**	**556,000**

*See detailed budget

IV. Executing agency and execution structure

4.1 Several entities are involved with water quality affairs, including the Ministry of Environment, the regulatory agency (*Unidad Reguladora de Servicios de Energía y Agua* - URSEA), the water supply operator (OSE), and the Ministry of Health. Considering the need to ensure an interinstitutional approach and acknowledging the situation of emergency mentioned in 2.5, the TC will be executed by the Bank, as explicitly requested by OSE. The Water and Sanitation sector specialists from the IDB Uruguay Country Office (WSA / CUR) will supervise and perform the required tasks to ensure successful performance. As formally expressed, OSE will form a technical team to accompany and contribute to the review of the products to be financed.

4.2 The disbursement period of the TC is 24 months (including execution). The activities to be financed with this operation are included in the Procurement Plan in Annex IV and will be executed in accordance with Bank policies and procedures as follows: (i) the hiring of individual consultants will be governed by the guidelines established in policy AM-650; (ii) the hiring of consulting firms of an intellectual nature will be governed by the "Policy for the selection and contracting of consulting firms for operational work carried out by the Bank" (GN 2765-4) and its Operational Guidelines (OP-1155-4); and (iii) other non-consulting services in accordance with the "IDB Institutional Procurement Policy" (GN 2303-28). All activities foreseen for this TC operation are included in the procurement plan and will be executed in accordance with the bidding methods and terms established.

4.3 Within the Bank, INE/WSA will be responsible for the execution and supervision of the TC. Monitoring of the execution will be carried out through the following mechanisms: (i) technical working meetings between OSE and the IDB; (ii) Bank's review of the technical reports to be presented by the consultants, considering feedback from OSE; and (iii) if necessary, coordination meetings between OSE, IDB, and other stakeholders. Due to the nature of the TC and the proposed technical monitoring system, the financing of a final technical evaluation report is not foreseen. The Bank will follow up to ensure that the products developed are used within the framework of the sector's public policy. OSE will provide inputs during the execution period of the operation as the IDB team leader, in coordination with the team, will prepare a semi-annual monitoring report following the requirements of the IDB and the donor fund.

V. Major issues

5.1 The potential lack of interest from consulting firms will be mitigated through proper dissemination at the national and international level.

5.2 The lack of coordination between the consultancies in charge of the the products of component I and the ones in charge of the products of component II, may cause delays in the TC execution, which may result in the need to finance additional studies. Therefore, to achieve an effective coordination, a strict monitoring plan will be implemented by the Bank's water and sanitation specialists, in coordination with the beneficiary.

5.3 Regarding the risk of the activities not being sustainable (in case that upon finalization of the TC-financed activities the arsenic removal systems designed are not implemented), the TC will support the design and development of contributions to the arsenic removal national strategy.

VI. Exceptions to Bank policy

6.1 This TC does not foresee any exceptions to Bank policy.

VII. Environmental and Social Strategy

7.1 This Technical Cooperation is not intended to finance pre-feasibility or feasibility studies for specific investment projects or environmental and social studies associated with them; therefore, this TC does not meet the applicable requirements of the Bank's Environmental and Social Policy Framework (MPAS).

Required Annexes:

Request from the Client - UR-T1274

Results Matrix - UR-T1274

Terms of Reference - UR-T1274

Procurement Plan - UR-T1274