

# Terms of Reference

**Post title:** National Water/Agriculture Economics Specialist for Wastewater Reuse  
**Project Title:** ReWater Project  
**Duration:** Short Term Consultancy  
**Location:** Cairo, Egypt

## BACKGROUND & RATIONALE

In many parts of the world, there is not enough water to meet growing demand. One promising solution is smart use of water that has already been previously used. Water can be used in cities and reused in agriculture with benefits for all. Drawing on experience with water reuse strategies already developed in the region, the ReWater MENA project will identify promising innovations and validated reuse.

Under funding from the Swedish SIDA, and the leadership of the International Water Management Institute (IWMI), CEDARE in cooperation with other partners embarked in 2018 on a 4-year project that will help expand the safe reuse of water in the Middle East and North Africa (MENA). The project will address barriers to reuse in the region and promote safe reuse practices that improve food safety, health and livelihoods, with the aim of resolving past management bottlenecks. These include cultural barriers, institutional fragmentation, inappropriate regulations and lack of financial models for cost recovery. With a focus on Egypt, Jordan and Lebanon, the project will facilitate inclusive and participatory engagement with stakeholders, to support the development and uptake of project results. CEDARE is implementing some of the ReWater project activities in Egypt that has to do with convening Water Reuse Learning Alliance stakeholders and developing a 2030 National Water Reuse Strategy.

## OBJECTIVE

The objective of the assignment is to assess the financial requirements and economic feasibility of national Wastewater Reuse targets for Egypt until 2030.

## PROPOSED METHODOLOGY

1. The Consultant is expected to obtain current costs and benefits based on 2022 market conditions and compare Cost Benefit Analysis (CBA) with other choices and document sources of information.
2. Determine the Cost Benefit Analysis (CBA) of the proposed National (14) and Local (10) wastewater reuse targets which will be provided to the consultant including:
  - a. Cost per reuse target: Assessing the costs (both Investments and O&M) for each of the 24 reuse targets (will be provided).

Assess approximately the Costs for each target, including:  
The construction of the proposed systems, including the hardware and software, such as:

    - Pumps, pipes, nozzles, valves, civil and other auxiliary works
    - Control systems
    - Management
    - Operation, Maintenance, testing and laboratory analyses.
  - b. Benefits per reuse target: Estimate potential monetary and non-monetary benefits of each of the 24 reuse targets (will be provided).

Economic techniques will be used to assess the monetary benefits and economic returns to the use of WW in case of non-market situations.

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- Benefits accrued from water reuse in agriculture based on anticipated varieties of potential crops
  - Health Benefits from improving the water quality of water resources
  - c. Determine Benefit/Cost ratio, the year of breakeven between costs and benefits.
3. Compare the cost of direct versus indirect reuse, and determine the Costs and Benefits of potential double treatment of domestic wastewater vis-à-vis the proposed reuse targets and provide recommendations with proposed technical solutions to reduce costs.
  4. Review the National Learning Alliance's recommendations (will be provided) of the following components for the Enabling Environment for the 2030 Egypt Water Reuse Strategy and develop appropriate actions and recommendations:
    - a. Financial measures / implementation cost
    - b. Policy and incentive measures:

(N.B. make sure no double counting between local and national targets in estimating total national strategy budget).

### DELIVERABLES

The **Economic** Specialist will perform the tasks described under the above mentioned methodology, submit the following deliverables and will be available to share progress & results during the assignment:

#### **Deliverable 1:**

Cost Benefit Analysis of each of the 14 National Reuse Targets, including Investment Cost, Operation & Maintenance Costs, and expected Benefits (monetary & non-monetary)

#### **Deliverable 2:**

Cost Benefit Analysis of each of the 10 Local Reuse Targets, including Investment Cost, Operation & Maintenance Costs, and expected Benefits (monetary and non-monetary)

#### **Deliverable 3:**

Cost Benefit Analysis for Direct Water Reuse vs Indirect Water Reuse including the cost for double treating domestic wastewater with recommendations of what could be done to avoid additional costs

#### **Deliverable 4:**

Develop recommended appropriate, realistic and achievable strategic actions for the Enabling Environment of Egypt 2030 Water Reuse Strategy in the following areas:

- a. Financial measures / implementation cost with **Budget breakdown**
- b. **Policy and incentive measures:**

All the deliverables should be approved by CEDARE.

### TIME FRAME

All activities should be completed within 3 weeks from signing the contract.

### SUPERVISION

The consultant will be supervised by the REWATER Project Manager. REWATER Economic Specialist, will be closely associated with the consultant in reviewing the drafts and reviewing the deliverables.

### QUALIFICATIONS

- PhD and/or Master's degree in Civil/Water/Environmental Engineering and or Economics
- At least 10 years of experience
- Strong experience in the field of Water Resources & Agriculture Economics
- Water Supply, Wastewater, & Reuse Experience.

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- knowledge of local unit costs of wastewater treatment, agriculture drainage treatment facilities, conveyance and pumping equipment
- basics of sewage and wastewater treatment design
- Fluency in Arabic and English languages (spoken and written).
- Computer and Internet skills, particularly experience with MS Office (Word, Outlook, Excel & PowerPoint)
- Flexibility, adaptability and demonstrated team work skills
- Strong coordination, organizational, communication and writing skills
- Capacity to meet with senior officials to gather the necessary information and data.

### APPLICATION PROCESS

Interested candidates should send the following in a single word document, named by (LAST NAME) of consultant, that include the following:

- Letter of interest clarifying the methodology for undertaking the assignment
- CV

The subject line of the email should read "National Economic Specialist for Wastewater Reuse", the application should be sent to:

REWATER Project Manager

email: [water@cedare.int](mailto:water@cedare.int)

Closing Date: 8 February 2022

For more information on the project and the organizations involved, including its core values and competencies, please visit the following website:

[www.cedare.int](http://www.cedare.int)

[water.cedare.int](http://water.cedare.int)

[rewater.cedare.org](http://rewater.cedare.org)