



## Improve acceptance of water reuse

## Guidelines for planners, investors, project designers and operators

#### **Main issues**

In different contexts in the Middle East and North Africa (MENA) region, water reuse can trigger rejection. Building trust among stakeholders can increase acceptance and longterm use of water reuse technologies and practices.

Understanding these major issues and concerns and addressing these with timely, effective communications can significantly improve uptake of reclaimed water. A comprehensive communication plan targeting key stakeholders is essential to the success of water reuse projects or policy decisions.

### **Key points**

- Water reuse is becoming increasingly important for water security in dry and arid regions
- Barriers to acceptance of water reuse include health and environmental risks, cost, and religious or cultural factors
- Acceptance of reclaimed water is the result of trust, knowledge, cost, risk mitigation, and the availability of alternatives
- Early stakeholder engagement and a comprehensive communication plan will establish an informed community that advocates for water reuse

Current technologies and practices to manage reclaimed water projects can meet and exceed human health-based targets. However, the lowest levels of acceptance for water reuse are observed in the home, for drinking, cooking, or bathing. Water reuse for irrigation on farms or recreational parks, such as golf courses or gardens, is generally more readily accepted.

This brief will provide a greater understanding of the issues that hinder acceptance of water reuse across the MENA region, and tools and strategies to overcome them.

#### Context

Demand for freshwater resources is increasing due to population growth, urbanization, and agricultural expansion and intensification. The MENA region is one of the most arid regions on Earth and is characterized by low water availability. Agriculture is the dominant water user in most countries in the region and a key driver of economic development. The gap between water supply and demand is widening every year.

Governments in the MENA region are urgently seeking interventions to increase water security, including efforts to optimize water management, narrow the supply-demand gap and prevent water quality degradation. One promising solution is the smart use of water that has already been used. Water can be used in cities and reused in agriculture or for other beneficial purposes, with benefits for all. Water reuse has great potential to help overcome some of the challenges posed by the increasing pressure on already stressed water resources.

















## Water scarcity as a driver for acceptance of water reuse in Palestine

Water shortages in the Palestinian territory of Deir Debwan have forced residents to seek alternative water sources. A recent study in 2008 revealed that 87% of respondents were willing to use reclaimed water, whereas 85% indicated they were willing to consume products irrigated by reclaimed water. The considerably high acceptance of using reclaimed water for agriculture is a direct response to limited access to water resources in the region.

### **Understanding barriers for acceptance**

Different communities and stakeholders have varying degrees of acceptance of water reuse initiatives. The use of reclaimed water for food production is typically better accepted than for cooking, drinking, or bathing. Key issues that influence perceptions of water reuse include the following:

- · Health, environmental and agronomic risks
- Emotional, cultural, and religious factors
- Costs of technology and capacity to fund initiatives

Public acceptance of reclaimed water is the result of a combination of factors, including attitude, subjective norms, knowledge, trust in providers, perceived risk, cost, and availability of alternatives. To improve the perceptions of water reuse, we need to understand the barriers to accepting reclaimed water and address these through effective communications.

#### Health, environmental and agronomic risks

The fear that reclaimed water may still contain negligible amounts of pollutants such as pathogens, metals, drug residues, and organic toxic compounds, may trigger rejection. The potential presence of these pollutants is typically perceived as environmental, health or agronomic risks by both farmers and the public. Even in cases where the risks are negligible or non-existent, the public perception of risk increases depending on the appearance, color, and odor of reclaimed water.

The public tends to be more concerned with the health risks associated with the use of reclaimed water when they perceive that the quality of water is not guaranteed. Farmers are more concerned with the long-term effects of water reuse and the accumulation of pollutants in soils. Farmers are also typically concerned that the stigma associated with water reuse may affect the demand or market price for their produce.

Farmers and the public also recognize the benefits of having a reliable water source throughout the year and increased levels of nutrients for agriculture. End users can promote or compromise water reuse projects or policy decisions.

#### Emotional, cultural, and religious factors

For water reuse initiatives to be successful, community and public attitudes need to be understood and addressed. Trust in medical and scientific evidence is often outweighed by personal impressions of water quality, especially the emotional response to water that has been in contact with contaminants such as sewage. It can be difficult to accept that the water has been purified and deemed safe for consumption or reuse. Similarly, people who believe that reclaimed water is not religiously accepted are less likely to use reclaimed water than those who do not.

# Costs of technology and capacity to fund and sustain projects

There may be significant costs associated with funding, and operation and maintenance of water reuse projects. Equitable distribution of costs among stakeholders is critical to acceptance, with consideration for their capacity to pay.

Various subsidies and incentives are required for most water reuse projects as cost recovery through users cannot be guaranteed. Capital investment is financed in most cases with state funds and by international donors. High-income countries are better positioned to subsidize or recover project costs of operation and maintenance.

### **Overcoming acceptance barriers**

Initial reactions to new technologies or controversial ideas often depend on where the information originated, how it was presented, and who was involved. To overcome barriers to acceptance of water reuse, there are key strategies and tools available, which include the following:

- Public participation
- Early and continuous communication
- Careful messaging and terminology

The recommendations below assume that the water reuse project is safe for people, crops and the environment, is economically viable, and benefits the environment and society.

#### Encourage public participation and discourse

Research confirms that communication and engagement with stakeholders increase acceptance of water reuse. Creating a sense of ownership through public involvement increases that support and is a process through a series of activities to inform and obtain input, not only a single event.

Participation provides the public and stakeholders an opportunity to influence decisions that affect them, and project managers should consider recruiting local advisory councils to allow for comment, tours, and open houses. Site visits to existing water reuse projects have also proven to be a positive influence on acceptance.

## Engage proactively in early and continuous communication to build trust

Once a negative narrative on water reuse has been voiced, it is difficult to overcome. Communication on water reclamation projects should begin early to build trust over time and complement the broader resource planning effort. Communication activities should include information to community organizations, the media and local leaders on decision-making processes and benefits; distributing brochures to utility customers; and hosting information booths and sessions at public events.

A successful communication plan contains strategies that allow stakeholders to study the evidence and draw their own conclusions, seeing both the decision-making process and the decisions themselves through transparency. Project monitoring and accountability are key. Information on developments, positive or negative, should be first heard from project managers. It should be possible to identify a problem when an incident occurs and be able to trace the root cause of the problem to take early action in the future.

#### Careful messaging with the right terminology

Water reuse is relatively new. Its value must be presented in simple, compelling terms, avoiding technical language, and emphasizing benefits and low risks of reclaimed water. Choice of words and terminology can overcome negative reflexes. Consider each audience as messaging is developed: what may resonate with investors will be different to what moves end users. Terms like reclaimed water, recycled water, and water reuse improve acceptance, compared to terms such as wastewater. Once reclaimed, wastewater is not a waste anymore, and the term should be avoided in water reuse projects.

Water security for the MENA region is a primary concern, and shaping positive messages on alternative water supplies will continue acceptance of water reuse to address serious, long-term water shortage issues. Health and safety should be promoted as the most important concern and highlight the flawless safety record in the region.



#### Maximize trust with community stakeholders



### **Odor and color matter**

The physical properties of water are related to its appearance: color, temperature, turbidity, taste, and odor. To be better accepted, water must be free from impurities that are offensive to the sense of sight, taste, or smell. One very important physical characteristic that should be encountered when discussing water quality is turbidity – the amount of cloudiness in the water.

# Communicate the benefits of water reuse and how risks are mitigated

Water reuse holds significant benefits for cities and rural agricultural areas, and should be promoted. It improves water quality and increases its availability, benefiting the environment, especially aquatic ecosystems.

Where possible, benefits for end users and stakeholders should be quantified and preferably with an economic justification. This will provide tangible targets and set expectations. It is also valuable to communicate risk, and a successful communication plan will include details on how risks are being mitigated. Communication between organizations and stakeholders builds trust and has a major influence on the level of support for water reuse projects.



A key source and further reading: Mateo-Sagasta, J.; Drechsel, P. 2022. Guidelines to improve acceptance of water reuse. In: Mateo-Sagasta, J.; Al-Hamdi, M.; AbuZeid, K. (eds.). *Water reuse in the Middle East and North Africa: A sourcebook*. Colombo, Sri Lanka: International Water Management Institute (IWMI). pp.142-155. https://hdl.handle.net/10568/129127

#### For more information, visit: https://rewater-mena.iwmi.org/

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## International Water Management Institute



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