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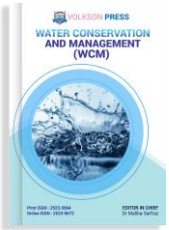

REVIEW ARTICLE

# MITIGATION TECHNIQUES TO OVERCOME WATER SCARCITY ISSUES

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**ABSTRACT**

Water scarcity is one of the tricky constraints not in the favor of constant economic development, social sector and natural veracity in the industrialized and unindustrialized country. To minimize water scarcity, utilization of treated wastewater as an alternative technique for irrigation and other purposes by installing wastewater treatment plants to treat the influent comes from the industries. Wastewater reuse has quiet restricted information and consciousness. To change the public behavior towards wastewater reuse, require to educate them, arrange public meetings, seminars and other practices that can easily pull the people mind. So, for this purpose, require to build up a tool which can easily help to policymakers during the consideration of main and significant factors that can manage implementation policies of wastewater reuse. Therefore, purpose and the scope of this work are to develop a system which can easily support the decision for accessing the possibility of implementing reuse of wastewater systems.

**KEYWORDS**

wastewater reuse, agricultural irrigation, public awareness

## 1. INTRODUCTION

Worldwide availability of water resources, forty percent of the population of the world eminent to the water scarcity situation, and also reserves of water are oppressed quicker than replenish [1]. Rapid growth in agriculture, population, industrialization, natural incidences, and urbanization have an amplified requirement for natural water resources within several fragments of world and planners of the resources of water are frequently considering for additional water sources to enhancement the accessible area of partial resources [2,3].

Environmental pollution raising in urban areas because of the subsequent increase in industrialization and population, that continuously generate wastewater [4]. Latest works have centered on wastewater reuse to support the sustainable and competent use of water for non-potable uses via dual reticulation [5]. Treatment of wastewater considered as an important matter of facts that attracts the government and nongovernment agencies, ENGOs and institutions due to the facts that contribute for the lessening of proliferation diseases and avoids the surface and groundwater pollution.

To enhance the wastewater reuse and its treatment by spending a lot of money and time to point out the most efficient solution providing financial and technical services from many nongovernment organizations [6]. In this study, develop a tool which assists decision-makers in the water industry to achieve a balance between social, economic, and environmental attributes involved in the implementation of wastewater reuse.

## 2. CHARACTERISTICS OF EFFLUENTS

Land solicitation of industrial effluents had an excessive inducement in observation of its compost and soil acclimatizing properties if it holds lethal constituents. The varied nature of effluents created at diverse treatment plants and the differences between season needs an acquaintance of the chemical configuration of industrial effluents proceeding to the application of land.

Industrial effluents characteristics are contingent on wastewater treatment procedures and effluent treatment. Frequently industrial effluent is tranquil of macronutrients, organic compounds, an extensive variety of micronutrients, microorganisms and organic micro pollutants and non-essential trace metals [7]. The macronutrients in industrial effluent aid as a virtuous source of organic elements and plant nutrients provide valuable soil taming properties [8].

## 3. REUSE OF WASTEWATER AS AN ALTERNATIVE METHOD FOR AGRICULTURE PURPOSE

Practices of agriculture are extremely reliant on irrigation while the sustainability of agriculture is directly associated with the quality of irrigation water [9]. Wastewater applications on agricultural land have both positive and negative impacts. Positive in terms of income generation for farmers and negative in terms of economic loss caused to crops, plants and degraded lands as a result of continuous wastewater applications [10]. The reuse of wastewater has become a striking choice for extending and conserving the available supplies of water. Reuse comprise the reduction in amusement of surface water from a subtle environment, soil nutrients refill in agriculture because of irrigation, enrichment of the recharge of

groundwater and interruption [11,12]. The population of developing countries continuously shifting from rustic to metropolitan area, group of Integrated wastewater and treatment system would be enlarged, generating substantial chances to employ the reuse wastewater system to supplement water equipment and in numerous circumstances, increase the value of freshwater [13].

By continuous using of wastewater for agriculture purposes not just only depreciate the soil conditions and also affects its productiveness and also have severe impacts on the human body [14]. Wastewater comes from the industry having a glut amount of nutrient, dangerous chemicals, and poisonous metals [15]. The continuous applications of effluents have both positive and negative impacts on agricultural areas as it is encumbered with huge concentrations of organic and inorganic heavy metals and pesticides, besides this sewage sludge also enriched with several nutrients such as N, P, and K useful for plants and crops productivity [16].

## 4. AWARENESS OF TECHNOLOGY

Include the local communities as well as government representatives for the implementation and promotion of new technology and also arrange conferences, local corner meetings, arrange short lectures and technical sessions for the concern of better understanding. Organize public awareness campaign about wastewater reuse. Local participation must include for the understanding of their particular needs regarding wastewater issues. Local communities can heave in suitable indigenous ideas for cost saving.

## 5. CONCLUSION

The current study gives a broader judgment and outlines for the use of treated wastewater. By using treated effluents can reduce the water deficits for the agriculture purpose and also protected the high-quality fresh water for avoiding overexploitation of aquifers. Well-crafted policies regarding wastewater use can improve the incomes of poor urban and peri-urban farmers. Use of local resources and involving the beneficiaries like stakeholders particularly small farmers would be indispensable for the long-term impact of the project.

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