

# A RESEARCH PAPER ON DESALINATION IN BANGLADESH

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## ABSTRACT

*Bangladesh is blessed with immense storage of fresh water both above and under the ground. In recent years withdrawing much ground water has caused the decreasing of water level, moreover the quality of water is also decreasing day by day for the increasing amount of pollution. Both the scenarios result in fresh water deficiency. The problem is most acute in coastal areas. The coastal area of Bangladesh consists of 19 districts, which contains 32% of the country and provides shelters for more than 35 million people. According to World Bank research Bagerhat, Barguna, Barisal, Bhola, Khulna, Jhalakati, Pirojpur, and Satkhira districts are the most salinity prone areas. The study also estimates that the salinity will increase to 26 percent in these areas with a possibility to cross 55 percent in the most affected areas like Chittagong, Barisal and Khulna by 2050. The increased salinity will cause acute deficiency of drinking water, irrigation problems and degradation in fishery productivity. In a bigger picture it will change the aquatic ecosystem, mangrove forestry and eventually leads to a huge human migration from the coastal area. Desalination of sea water in such areas can be an affordable source of fresh water for the inhabitants. According to the international desalination association, nearly 17000 plants are currently in operation in 120 countries. We have Qatar charity (QC) desalination plant and Paigasa desalination plant in Bangladesh for the benefit of more than 20000 people. Some solar based small scale research projects have been conducted in southern part of Bangladesh. The need for safe and reliable water quantity in Bangladesh continues to increase day by day following the expected population expansion by the year 2050. Further, the drawdown of ground water sources, desalination remains the best option that can meet domestic, public and industrial water demands. It does not only address the immediate water needs but also plays significant role in addressing Bangladesh's long term issue of water security. Thus the research report studies different information regarding the desalination technologies, the impacts associated with those technologies and overall cost implications. Different desalination processes implemented in countries like India, China, Australia and Saudi Arabia have been contemplated. Emphasis have*

*been specified on the processes practiced in different countries to find out a more suitable solution in view of the economic condition, geographical and climatic characteristics of Bangladesh. The report examines the advantages and disadvantages of each desalination technology for global situation of Bangladesh, and the determinant factors for each technology. This report also proposes a most suitable and practical desalination plant to overcome the huge fresh water scarcity for Bangladesh in future.*

**Keywords:** Desalination; Bangladesh; Technologies; Desalination processes; Suitable.