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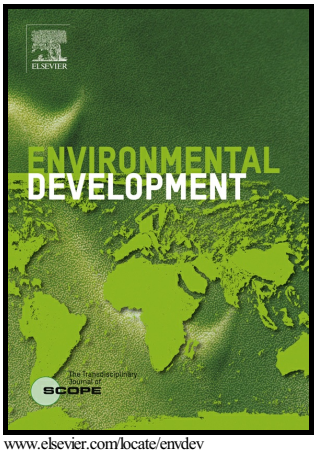

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PII: S2211-4645(17)30192-6
DOI: https://doi.org/10.1016/j.envdev.2018.03.005
Reference: ENVDEV386

To appear in: *Environmental Development*

Received date: 16 July 2017
Revised date: 26 March 2018
Accepted date: 27 March 2018

Cite this article as: Laila Hossain, Sumit Kanti Sarker and Mohidus Samad Khan, Evaluation of Present and Future Wastewater Impacts of Textile Dyeing Industries in Bangladesh, *Environmental Development,* https://doi.org/10.1016/j.envdev.2018.03.005

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Evaluation of Present and Future Wastewater Impacts of Textile Dyeing Industries in Bangladesh

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Abstract

The textile sector has been an important part of Bangladesh's (BD) economy over the past few decades. In Bangladesh, the textile sector currently has an export value of nearly 28 billion USD per year which contributes about 82% of the country's total export earnings. It is projected that the annual ready-made garment (RMG) export value will be about 50 billion USD per year by 2021. However, the growth of Bangladeshi RMG sector is associated with different environmental issues, mostly caused by wastewater generated by textile industries. Textile industries consume high volumes of water per unit fabric for processing, which cause depletion of ground water levels at a high rate. In addition, in many cases textile effluents are discharged into rivers or wetlands without proper treatment. Untreated textile effluent can contaminate groundwater and waterbodies, reduce dissolved oxygen in water and affect aquatic ecosystems which may indirectly cause climate change. Improving conventional technology, adopting cleaner production (CP) options, the reusing and recycling of treated water may reduce water consumption, effluent volume and water stresses, and may help preserving aquatic ecosystems. However, additional investments, lack of technological knowhow, and awareness are factors limiting the adoption of cleaner production options. In order to take effective measures for future improvement it is important to develop a nationwide wastewater impact tracking system. In this study, a material balance approach has been developed to characterize the trend of pollution impacts (2011-2021) associated with the textile dyeing industries of Bangladesh. It is estimated that in 2016 textile industries in Bangladesh produced about 1.80 million metric tons of fabric, which generated around 217

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