

Chapter 16

Industrial Wastewater Management in the Context of Climate Change Adaptation in Selected Cities of India: A Business Approach

Rahul Hiremath

*SCMHRD, Symbiosis International University,
India*

Gurudas Nulkar

*SCMHRD, Symbiosis International University,
India & Trustee Ecological Society, India*

Bimlesh Kumar

Indian Institute of Technology Guwahati, India

Sharmila S. Patil

Walchand Institute of Technology, India

Sheelratan S. Bansode

Solapur University, India

J. Murali

Environmental Solutions and Consultancy, UAE

ABSTRACT

Climate change and wastewater control are one of the foremost demanding situations for Indian cities. Urbanization and unparalleled growth of cities across India continue to create immense pressure on land and water resources. This uncontrolled growth continues to produce growing volumes of wastewater. Climate change, impacts inclusive of, intense storm events in summer time or extended moist periods in wintry weather are quite visible in India. In urban and peri-urban areas, wastewater use for agriculture is an emerging precedence. Due to susceptible enforcement of regulatory, most of the wastewater generated is permitted off untreated/ partially treated. While many previous studies have checked out the global modifications and associated impacts of climatic variations on water resources, few have targeted at the evaluation of the particular effects and adaptation priorities for water systems in towns. Proper reuse of wastewater for irrigation will significantly lessen the shortage, offer a sustainable water source, improving farming productiveness, lessen pollution, generate livelihood potential for

DOI: 10.4018/978-1-5225-1046-8.ch016

low earnings city households along with contributing to their each day food needs. There are tradeoffs which need to understand which includes problems to individual's health, and surroundings. Through suitable treatment methods, water users' cooperatives, policy shift and the introduction of market based approaches, treated wastewater use in agriculture can be enhanced and all associated risks can also be curtailed. This chapter focuses on use of treated urban wastewater and its management for agriculture in selected Indian cities.

INTRODUCTION

Urban wastewater management is a challenge for many developing countries including India. Rapid urbanization and unparalleled growth of cities across India continue to create immense pressure on land and water resources. This uncontrolled growth continues to produce growing volumes of wastewater. Due to weak enforcement of regulatory measures, most of the wastewater generated let off untreated/partially treated. While many preceding research have checked out the global modifications and climate related variability on water sources, few have targeted at the assessment of the specific consequences and version priorities for water systems in cities. Proper reuse of wastewater in irrigation can significantly lessen water shortage, offer a sustainable source of water, improving agricultural productivity, lessen pollution, create livelihood potential for low earnings city households, put in to their each day food needs. Hence a needed focus to understand and review the wastewater supply and treatment for Indian cities is required. The variety of challenges associated with climate, water and cities are very pressing, which depends on its demography, economics and administrative potential. The urban wastewater use for irrigation is a growing global phenomenon. Such irrigation method can build livelihood opportunities and strengthen food security. But the major hurdle is to come up with the sensible, low-cost safeguards that do not hamper farmer's livelihoods and thus providing a useful resource in meeting food needs and supplying cheap produce to expanding towns. Through suitable treatment methods, water users' cooperatives, policy shift and the introduction of market based approaches, treated wastewater use in agriculture can be enhanced and all associated risks can also be curtailed. This chapter focuses on use of treated urban wastewater and its management for agriculture in selected Indian cities.

CHANGE IN CLIMATE AND ITS EFFECT ON WATER RESOURCES AND AGRICULTURE

Climate change as per the United Nations Framework Convention on Climate Change (UNFCCC) has been defined as, "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods". Increased emission from industrial sectors along with changed agricultural pattern combined with widespread deforestation has effected a change in the gaseous composition of earth's atmosphere (Table 1).

The global yearly mean temperature toward the end of the twentieth century, as an after effect of GHG aggregation in the climate, has expanded by 0.4–0.7 °C over that recorded toward the end of the nineteenth century. The previous 50 years have demonstrated an expanding pattern in temperature @

18 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/industrial-wastewater-management-in-the-context-of-climate-change-adaptation-in-selected-cities-of-india/171262

Related Content

Science Communication as a Tool for Advancing the Environmental Education on Climate Change: Can Africa Do It Better?

Innocent Chirisa, Elmond Bandaikoand Shingai T. Kawadza (2016). *Promoting Climate Change Awareness through Environmental Education* (pp. 96-110).

www.irma-international.org/chapter/science-communication-as-a-tool-for-advancing-the-environmental-education-on-climate-change/138152

Energy Intensity of Structural Grinding of the Soil by Deep Loosening

Olexander Lukyanchuk (2023). *Handbook of Research on Improving the Natural and Ecological Conditions of the Polesie Zone* (pp. 243-257).

www.irma-international.org/chapter/energy-intensity-of-structural-grinding-of-the-soil-by-deep-loosening/324042

Climate Change and Profit Loss: A Case History of Salinity Intrusion in Rice Production

Huynh Viet Khai (2020). *Advanced Integrated Approaches to Environmental Economics and Policy: Emerging Research and Opportunities* (pp. 105-119).

www.irma-international.org/chapter/climate-change-and-profit-loss/236729

Disease Surveillance System for Big Climate Data Processing and Dengue Transmission

Gunasekaran Manogaranand Daphne Lopez (2018). *Climate Change and Environmental Concerns: Breakthroughs in Research and Practice* (pp. 427-446).

www.irma-international.org/chapter/disease-surveillance-system-for-big-climate-data-processing-and-dengue-transmission/201715

Effects of Wind Farms Through the Forest Road Network on Grasslands in Greece

Aimilia Lempesi, Christodoulos Daoutisand Panos Dimitrakopoulos (2026). *Economic, Social, and Environmental Insights on Energy Transition* (pp. 189-214).

www.irma-international.org/chapter/effects-of-wind-farms-through-the-forest-road-network-on-grasslands-in-greece/393544