

Biomass Conversion from Municipal Solid Wastes to Useful Products - Case of Bahir Dar City Near Lake Tana Basin

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Abstract

Bahir Dar is a rapidly urbanizing city of the Amhara National Regional state in Ethiopia. Generation of municipal solid waste is increasing annually at anxious rate. The accumulation of hazardous wastes, available landfill sites shortage, and seriously practicing of environmental issue regulations on the waste sites bring concerned problems on the solid wastes' disposal. The federal and regional bureaus of the environmental regulations are forcing the Bahir Dar city administrator to wisely search possibilities to landfilling. Therefore, diverting waste from disposal sites into useful products generate income and employment opportunities for young people living in the cities. This review study disclosed the possible treatment technology options that can be utilized for conversion of municipal solid waste into useful products such as thermal processing technologies, biological processing technologies; and biomethanation methods. The main feedstock requirements, the process conditions and the treatments of products are briefed and summarized, and the challenges and trends, in particular each technology applicability in the city low- and middle-income context are discussed in detail based on a review of literature and from the experts' experience. This reviewed study tried to reflect the WTE potential in the city together with the possible technologies, business opportunities and job and at last to keep the city environment clean and safe for the people living therein. More unbiased, well-structured and reproducible evidence from case studies at scale could foster the knowledge transfer to practitioners and enhance the exchange between academia, policy and practice. Therefore, the WTE policies of the city should be improved, evolved or modified that can encourage the suggested WTE process industries along with a few recommendations for the action course in the WTE sector that can support the WTE project developer, investors, suppliers, decision makers and the policy makers for further betterment of the city waste management and planning.

Biography:

Biruk Abate is currently working as lecturer at Bahirdar University, Ethiopia.

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