

Accepted Manuscript

Life-cycle cost-benefit analysis on sustainable food waste management: The case of Hong Kong international airport

Chor-Man Lam, Iris K.M. Yu, Francisco Medel, Daniel C.W. Tsang, Shu-Chien Hsu, Chi Sun Poon



PII: S0959-6526(18)30827-8

DOI: [10.1016/j.jclepro.2018.03.160](https://doi.org/10.1016/j.jclepro.2018.03.160)

Reference: JCLP 12418

To appear in: *Journal of Cleaner Production*

Received Date: 31 August 2017

Revised Date: 14 March 2018

Accepted Date: 16 March 2018

Please cite this article as: Lam C-M, Yu IKM, Medel F, Tsang DCW, Hsu S-C, Poon CS, Life-cycle cost-benefit analysis on sustainable food waste management: The case of Hong Kong international airport, *Journal of Cleaner Production* (2018), doi: 10.1016/j.jclepro.2018.03.160.

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1 **Life-cycle Cost-benefit Analysis on Sustainable Food Waste Management: the Case of**
2 **Hong Kong International Airport**

3 Chor-Man Lam^a, Iris K.M. Yu^a, Francisco Medel^a, Daniel C.W. Tsang^{b*}, and Shu-Chien

4 Hsu^{c*} Chi Sun Poon^a

6 **Abstract**

7 Food waste is responsible for a significant portion of solid waste generation in the
8 international airports, where efficient on-site or off-site sorting and recycling may be feasible.

9 The aim of this study is to develop a Life-Cycle Cost-Benefit Analysis (LC-CBA) framework,
10 through the integration of the life-cycle assessment (LCA) and cost-benefit analysis (CBA),
11 to guide decision-making in sustainable food waste management. The analysis tool assesses
12 the environmental and economic performance of different food waste management options,
13 as demonstrated in a case study of the Hong Kong International Airport with six food waste
14 handling scenarios consisting of different combinations of treatment technologies. Both
15 centralized (i.e., off-site) and on-site treatment options were evaluated. The on-site
16 incineration scenario was found to be the most sustainable option with the lowest life-cycle

^a Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University, Hong Kong.

^b Co-corresponding author. Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University, Hong Kong. Tel: 2766-6072. Email address: dan.tsang@polyu.edu.hk

^c Co-corresponding author. Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University, Hong Kong. Tel: 2766-6057. Email address: mark.hsu@polyu.edu.hk

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