HOKKAIDO UNIVERSITY

Title	Sustainability of municipal solid waste management in Ulaanbaatar, Mongolia : benchmarking approach for systems improvement [an abstract of dissertation and a summary of dissertation review]
Author(s)	Byamba, Bolorchimeg
Degree Grantor	北海道大学
Degree Name	博士(環境科学)
Dissertation Number	甲第12860号
Issue Date	2017-09-25
Doc URL	https://hdl.handle.net/2115/67637
Rights(URL)	https://creativecommons.org/licenses/by-nc-sa/2.1/jp/
Type	doctoral thesis
File Information	Byamba_Bolorchimeg_review.pdf, 審査の要旨

Hokkaido University Collection of Scholarly and Academic Papers : HUSCAP

学 位 論 文 審 査 の 要 旨

博士（環境科学）　　氏 名　Byamba Bolorchimeg

審査委員　主　査　准教授　石川　守
副　査　特任教授　田中　俊逸
副　査　教　授　沖野　龍文
副　査　准教授　藤井　賢彦
副　査　教　授　田中　教幸（岩手大学農学部）

学 位 論 文 題 名

Sustainability of municipal solid waste management in Ulaanbaatar, Mongolia: benchmarking approach for systems improvement

（モンゴル，ウランバートル市における固形廃棄物管理の持続可能性：国際的指標の適用によって示された途上国都市の改善策）

This study aims to assess the system of municipal solid waste management (MSWM) in Ulaanbaatar (UB), the capital city of Mongolia. The current system for MSWM were evaluated by “wasteaware” benchmark indicator, which is composed of physical components (public health, environmental protection, resource management), and governance aspects (inclusivity, financial sustainability, sound institutions, proactive policies). The indicator revealed that UB had mostly surpassed the levels of low- and lower-middle-income countries for public health, environmental protection and sound institutions, and met the prerequisites for modernizing its waste management system. However, there are still major steps ahead to fully transition to a modern system including quality service provision in low-income areas, occupational health and safety, environmental protection and integration of the informal sector. Access to capital for investment remains to be one of the biggest challenges. Availability and reliability of data is still a critical issue that requires priority as it is the backbone for planning of the MSWM and setting of targets with clear pathways to achieving them.

In order to see the differences of behaviours and attitudes between apartment and *ger* areas, public questionnaire regarding to the waste management service was conducted. This is especially critical for policy formulations that will in turn affect the service users. The results revealed significant differences between two areas in terms of demographic and socio-economic aspects. Differences in waste handling and collection affect the cost of waste collection services, not in favour of the more socio-economically vulnerable residents. Willingness to pay more money for service improvement also varies based on the type of residency as well as the age of the respondents. The lack of systematic educational and behaviour change programs make it more challenging to improve the current situation through public engagement and support. Residents of both areas agreed that the citizens are the most responsible stakeholder in waste management, which reflects the public mentality and need for progressive actions towards public education and behaviour change.

This study brought significant contributions to the existing literature gaps for UB and identified its key strengths and areas for further improvement. Results of public questionnaire and benchmark indicators could inform decision makers on choosing the most effective policies. The study concludes that an improvement in data collection and reporting, and widespread consultation with all stakeholders would impact positively on the systems improvement of the MSWM in UB.

In addition to the excellent academic knowledge in the research, her academic records throughout the Ph. D. course are excellent. Based on these evidences, the committee reached to a conclusion that Byamba Bolorchimeg deserves to become a Doctor of Environmental Science.