



UNIVERSITI PUTRA MALAYSIA

**SOLID WASTE MANAGEMENT SYSTEM IN THE KANIFING
MUNICIPAL COUNCIL AREA, THE GAMBIA**

DAWDA BADGIE

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**MASTER OF SCIENCE
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**SOLID WASTE MANAGEMENT SYSTEM IN THE KANIFING
MUNICIPAL COUNCIL'S AREA, THE GAMBIA**

BY

DAWDA BADGIE

**Thesis submitted to the School of Graduate Studies, Universiti Putra
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Degree of Master of Science**

November 2010



DEDICATION

This piece of academic work is dedicated to my family and dearest mother, for their love, support and encouragement during the period of my studies.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Master of Science

SOLID WASTE MANAGEMENT SYSTEM IN THE KANIFING MUNICIPAL COUNCIL'S (KMC) AREA, THE GAMBIA.

BY

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November 2010

Chairman : Professor Azizi b. Muda, PhD

Faculty : Environmental Studies

Pollution by solid waste and its management is an endemic problem that the Government of the Gambia through its municipalities has tried to address over the years but do not seem to bring it under control. Inadequate municipal solid waste management is certainly one of the major contributing factors to the degrading of environment quality. This study was done at Kanifing Municipal Council (KMC), one of the densely populated and rapidly growing urban settlements in The Gambia. The study is meant to determine the ramifications of poor solid waste management, the impact of



these on the communities, the problem associated with waste management at KMC and the applicability of integrated solid waste management system (ISWM) in the stated Municipality. A total of 410 questionnaires were distributed and these were administered to households within Kanifing Municipality using systematic random sampling. These were supplemented by personal interviews with the municipal council authorities, and other key stakeholders. The data was analyzed by a non-parametric statistical test such as chi square cross tabulation calculation. The study found that the residents of the area interviewed were reasonably aware of the importance of proper solid waste management in relation to health of the inhabitants, aesthetic value and tourism which needs to be enhanced. Significant challenges were discovered that need to be addressed in future and this include inter alia: low environmental awareness on waste reduction, separation and recycling techniques were discovered as well as; improper enforcement of waste related legislations, inadequate infrastructure, funding and expertise all of which are important when dealing directly with waste management. In general, the study shows that there are high prospects of addressing solid waste management issues in the Kanifing Municipality; however, more efforts are absolutely necessary by both the Municipal Authorities and the Central Government of the Gambia in achieving the set objectives of a clean and beautiful municipality.

Key words: Solid waste management system, Pollution, Solid waste, degrading urban environment, Kanifing Municipal council



Abstrak tesis yang dikemukakan kepada senat Universiti Putra Malaysia
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**SISTEM PENGURUSAN SISA PEPEJAL DI MAJLIS PERBANDARAN
DI KAWASAN PENTADBIRAN KANIFING, GAMBIA**

Oleh

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November 2010

Pengerusi : Profesor Azizi b. Muda, PhD

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Selama bertahun-tahun, Kerajaan Gambia melalui Majlis Perbandarannya masih tidak dapat mengawal masalah endemik yang berkaitan dengan pencemaran yang di sebabkan oleh sisa pepejal dan pengurusannya. Pengurusan sisa pepejal Majlis Perbandaran yang kurang cekap adalah antara penyumbang utama degradasi alam sekitar. Kajian ini dijalankan di Majlis Perbandaran Kanifing yang merupakan salah satu dari penempatan di Gambia yang mempunyai kepadatan penduduk yang tinggi dan masih terus meningkat. Kajian ini bertujuan untuk mengenalpasti kesan dari pengurusan sisa pepejal yang kurang berkesan, impaknya terhadap komuniti dan kesesuaian sistem pengurusan bersepadu sisa pepejal di dalam

kawasan perbandaran tersebut. Sebanyak 410 soal selidik telah diedarkan kepada isi rumah di sekitar kawasan Majlis Perbandaran Kanifing dengan menggunakan persampelan rawak bersistematik. Kajian juga disokong oleh temubual bersemuka dengan pihak bertanggungjawab dari Majlis Perbandaran Kanifing dan juga pihak lain yang terlibat. Data dianalisis menggunakan ujian statistik bukan-parametrik seperti pengiraan "*chi square cross tabulation calculation*" silang. Dapatan kajian hasil temubual menunjukkan penduduk di daerah tersebut mempunyai kesedaran tentang pentingnya pengurusan sisa pepejal yang sesuai dan hubungkaitnya dengan kesihatan penduduk, nilai estetika serta persekitaran pelancongan yang bersih yang perlu ditingkatkan. Cabaran signifikan yang perlu diberi perhatian pada masa akan datang termasuklah kesedaran alam sekitar yang rendah terhadap pengurangan sisa, kaedah pengasingan dan kitar semula, penguatkuasaan undang-undang yang kurang berkesan, infrastruktur yang tidak mencukupi, dan pembiayaan serta kepakaran di mana semuanya adalah penting dalam pengurusan sisa pepejal secara langsung. Secara keseluruhannya, kajian menunjukkan bahawa terdapat prospek yang tinggi dalam menangani isu-isu pengurusan sisa pepejal di Majlis Perbandaran Kanifing. Namun begitu, lebih banyak usaha diperlukan dari pihak perbandaran yang bertanggungjawab dan Kerajaan Pusat Gambia dalam mencapai objektif untuk menghasilkan bandar yang bersih dan cantik.

Kata kunci: Sistem Pengurusan sisa pepejal, Pencemaran, Sisa pepejal, kemerosotan alam sekitar Bandar, Majlis Kota Kanifing Perbandaran.



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To begin with, I would like to share the words of **Tokutomi Sobe (1863-1957)** – a renowned journalist and historian. He said; “A Stone, however big it is, may not be enough to build a Tall Castle. A man, however great he may be, cannot be a hero himself. A tall castle can be so tall because there are foundation stones that remain unknown. A man can be such a great hero because there are many heroes that remain unknown”. Therefore, in appreciation of the unknown foundation stones and heroes, I would like to express my sincere gratitude to the Government of Malaysia through the Ministry of Higher Education (MOHE) for the Commonwealth Scholarship and Fellowship Plan (CSFP) program awarded to me in pursuing this Master of Science degree (M.Sc) in Malaysia. I am very grateful to the support given to me by the Scholarship Division of the Ministry of Higher Education while undertaking my studies.

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I certify that an Examination Committee has met on the 11th November, 2010 to conduct the final examination of Dawda Badgie on his degree thesis title “Solid Waste Management System in the Kanifing Municipal Council’s Area, The Gambia” in accordance with Universities and Colleges Act 1971 and the constitution of the Universiti Putra Malaysia [P.U. (A) 106] 15 March 1998. The Committee recommends that the student be awarded the **Master of Science**. Members of the Examination Committee were as follows:

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DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently submitted for any other degree at Universiti Putra Malaysia or any other institution.

DAWDA BADGIE

Date: 11th November 2010



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