The Final Report: Applying Japanese Waste Management Practices to Mauritius: Opportunities and Challenges

1. Introduction

Waste management has become an increasingly important environmental challenge in Mauritius due to economic development and changing consumption patterns. These factors have contributed to a steady increase in solid waste generation, placing growing pressure on the country's waste management infrastructure. Mauritius remains heavily dependent on landfill disposal as its primary waste management method. In 2024, approximately 498,309 tonnes of solid waste were disposed of at the Mare Chicose landfill, the country's sole engineered sanitary landfill. Most solid waste is collected as mixed waste by local authorities and transported to transfer stations, from where it is transferred to the Mare Chicose landfill for final disposal.

Although Mauritius has introduced initiatives such as composting, recycling, and resource recovery for specific waste streams, source segregation and separate collection systems at household level have not yet been implemented nationwide. As a result, significant quantities of recyclable and organic waste continue to be disposed of together, limiting opportunities for resource recovery and increasing reliance on landfill disposal. This situation highlights the need to strengthen waste management practices and promote a transition from a linear economy towards a more circular model.

Recognising these challenges, the Government of Mauritius has undertaken several initiatives to improve waste management. These include the Waste Segregation at Source Project, which provides for the nationwide introduction of a three-bin segregation system, with the District Council of Black River serving as the pilot local authority. In addition, an Environmental Impact Assessment study has been commissioned to assess future management options for the Mare Chicose landfill, including its proposed vertical expansion.

Against this background, this paper examines selected waste management practices observed in Japan and assesses their applicability within the Mauritian context. It identifies opportunities for integrating relevant Japanese approaches into the existing waste management framework of Mauritius, while also examining the potential challenges and limitations associated with their implementation.

2. Japanese Waste Management Practices Observed

One of the most notable features of Japan's waste management system is the emphasis placed on waste separation at source. Households are required to sort waste into different categories, while municipalities support compliance through detailed waste separation guides, collection schedules, and clear instructions. In Japan households use designated bags to dispose of segregated waste, As observed in Nagoya City, improperly sorted waste may not be collected and is often marked with a warning sticker indicating the

reason for non-collection. In many areas, protective nets at collection points and wire-frame containers used for door-to-door collection help prevent crows from scattering waste before collection.

Beyond source separation, Japan's waste management system is guided by the principles of the 3Rs (Reduce, Reuse and Recycle), resource recovery, waste-to-energy treatment, minimisation of landfill disposal, and shared responsibility among citizens, private companies, and local governments through strong public-private collaboration. The presentation on Tokyo's "War on Waste" highlighted the critical role of public participation, environmental education, and continuous awareness-raising in achieving high levels of compliance with waste management policies. These efforts have helped foster a culture in which waste reduction and proper waste disposal are widely accepted social norms. The visit to the Suginami Incineration Plant demonstrated how waste-to-energy technologies can significantly reduce the volume of waste requiring final disposal while generating electricity and recovering valuable resources. This approach contributes to reducing dependence on landfill disposal and supports a more circular use of resources.

Another important lesson was the strong emphasis placed on environmental education and community involvement. During the visit to Wakabadai Elementary School, students actively participated in activities promoting waste reduction and recycling from an early age. Similarly, visits to Shikishima House, Green Springs, and Sorano Hotel showcased initiatives related to sustainable resource use, food waste reduction, and environmentally responsible lifestyles.

3. Applicability of Japanese Practices to Mauritius

Drawing from Tokyo's "War on Waste" campaign and community-based initiatives observed in Mitaka City, sustained public awareness and environmental education programmes could be strengthened to encourage behavioural change and foster a sense of shared responsibility among citizens. Similar initiatives could help improve public understanding of waste reduction, reuse, recycling, and proper waste segregation practices. To support the implementation of source segregation, Mauritius could provide residents with user-friendly waste separation guides, brochures, and collection schedules containing simple instructions and illustrations. Once residents become familiar with waste segregation practices, designated collection schedules for different waste categories, similar to those implemented in municipalities such as Suginami City, could be introduced to improve compliance and increase the effectiveness of segregation initiatives. Corrective measures for non-compliance could also be considered at a later stage, following adequate public sensitisation and capacity building.

In addition, another local authority could pilot the use of designated bags or other approved waste containment systems for source-segregated waste. Such an approach could reduce the initial costs

associated with procuring and distributing multiple household bins while allowing the effectiveness of the system to be evaluated before wider implementation. The waste-to-energy approach observed in Japan also presents a potential long-term option for Mauritius. While significant financial and technical considerations would need to be addressed, waste-to-energy technologies could complement existing resource recovery initiatives, including the production of biogas from organic waste and the use of bagasse for energy generation.

4. Challenges and Limitations

Firstly, significant financial investment would be required for the development of infrastructure such as waste incineration facility and the expansion of source-segregated waste collection systems. Secondly, limited public awareness and the need for behavioural change may affect the successful implementation of source segregation, requiring continuous environmental education and awareness programmes. Thirdly, additional technical expertise, human resources, and effective monitoring mechanisms would be necessary to manage and sustain new waste management systems. Furthermore, certain Japanese practices may need to be adapted to the Mauritian context. For example, the use of designated waste bags should be assessed for their cost-effectiveness compared with household bins and account for local conditions, including measures to prevent waste from being scattered by stray dogs.

5. Recommendations and Conclusion

It is recommended that Mauritius strengthen public awareness, environmental education, and community engagement to support the successful implementation of the Waste Segregation at Source Project. Regular monitoring of pilot initiatives should guide future nationwide implementation, while alternative waste containment systems and waste-to-energy technologies including waste incineration facility should be further assessed for their suitability and feasibility.

Japan's experience demonstrates that sustainable waste management requires more than infrastructure. It depends on environmental education, citizen participation, effective governance, proper waste segregation, increased resource recovery, and technological innovation. Although financial and institutional challenges exist, many Japanese practices can be adapted to the Mauritian context. Their successful implementation would benefit households through cleaner surroundings, local authorities through improved waste management efficiency and reduced waste disposal costs, and future generations through a healthier environment, increased resource recovery, and reduced reliance on landfill disposal, thereby contributing to a more sustainable and circular waste management system in Mauritius.

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