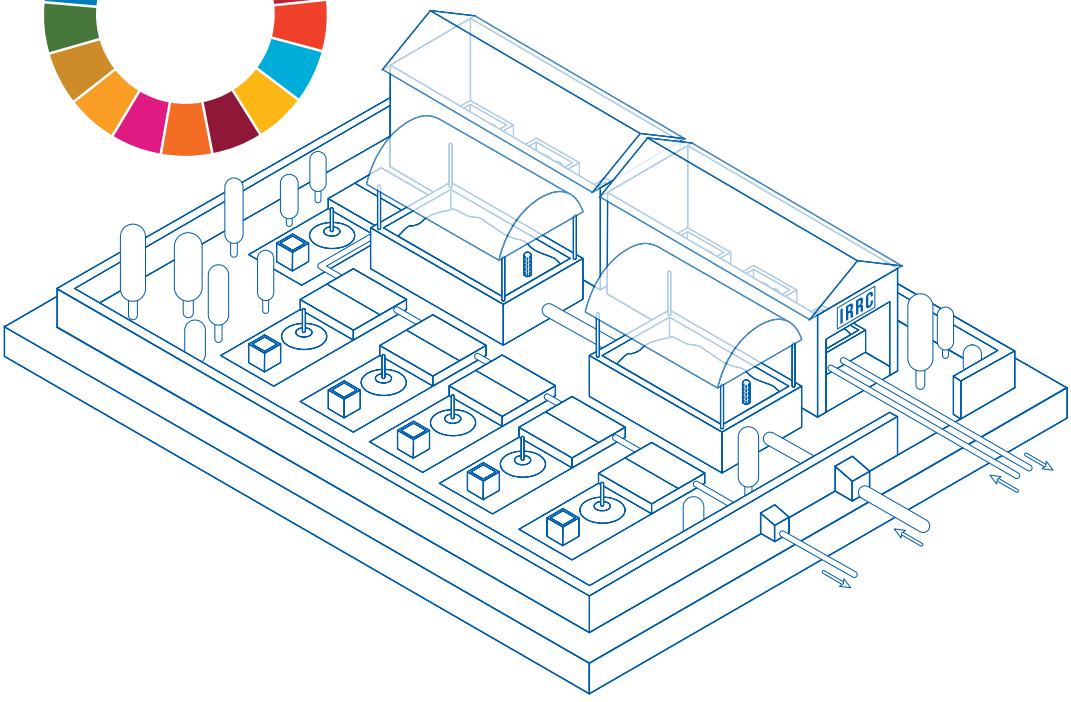
Sustainable Development Benefits of Integrated Waste Management

Integrated Resource Recovery Centers



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Acknowledgements

ESCAP, with technical support from Waste Concern, has assisted local governments in member States to establish and operate Integrated Resource Recovery Centers (IRRCs). ESCAP established IRRCs in 2007, one in Quy Nhon City in Viet Nam and another in Matale City in Sri Lanka. From 2009, ESCAP enhanced the regional implementation of IRRCs under its project on "Pro-poor and Sustainable Solid Waste Management in Secondary Cities and Small Towns in Asia-Pacific" which was funded by Bill and Melinda Gates Foundation. Through this project, ESCAP has provided financial support and technical capacity building assistance for the IRRC implementation in seven cities, and advised the local governments on policies and regulations to support sustainable municipal solid waste management.

This publication shares the key lessons from a decade of IRRC implementation to improve municipal solid waste management, and explains how the contributions of IRRCs can support the implementation of important global and regional agendas for sustainable development: the 2030 Agenda for Sustainable Development; the New Urban Agenda; the Paris Agreement under the United Nations Framework Convention on Climate Change; the Regional Road Map for the 2030 Agenda in the Asia-Pacific region; and the Ministerial Declaration on Environment and Development in the Asia-Pacific region. The publication also provides policy recommendations for promoting sustainable municipal solid waste management in secondary cities and small towns in the Asia-Pacific region.

This publication was prepared under the overall guidance of Stefanos Fotiou, Director, Environment and Development Division (EDD) and Curt Garrigan, Chief, Sustainable Urban Development Section (SUDS), EDD. The publication team was directed by Ram Tiwaree, Economic Affairs Officer, SUDS, EDD. The team includes Rahul Teku Vaswani, Batu Krishna Uprety, Jong II Chyun, Sam Johnson, and Alejandra Quevedo. ESCAP acknowledges the technical inputs of Waste Concern, and that of its project implementation partners in its member States. Last but not least, ESCAP expresses its profound gratitude to Bill and Melinda Gates Foundation for the generous funding to the project. Without the Foundation's support, preparation of this publication would have been not possible.

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Acronyms and Abbreviations

3R	reduce, reuse, and recycle
CO_2eq	carbon dioxide equivalent
ESCAP	Economic and Social Commission for Asia and the Pacific
GHG	greenhouse gas
IMHEN	Institute of Meteorology, Hydrology and the Environment
IRRC	Integrated Resource Recovery Center
MCED	Ministerial Conference on Environment and Development
MRV	monitoring, reporting and verification
MSW	municipal solid waste
MSWM	municipal solid waste management
NAMA	nationally appropriate mitigation action
NDC	nationally determined contribution
NUA	New Urban Agenda
OECC	Overseas Environmental Cooperation Center
SDG	Sustainable Development Goal
SUWM	sustainable urban waste management
SWM	solid waste management
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States dollar

Executive Summary

As the region experiences rapid urbanization, cities in Asia and the Pacific are generating increasing quantities of waste. Local governments, especially those of secondary cities and towns have limited resources and capacities to properly deal with their waste challenges. Cities in the region need appropriate sustainable waste management solutions that are low-cost and locally appropriate, provide sustainable development benefits, and ultimately create transformational change towards low carbon, resource efficient, resilient, and sustainable societies.

A large fraction of the solid waste generated by the cities, primarily the cities in low-income and middle-income countries in the region is organic. Therein lies the potential for recovering useful economic and ecological value from the low-cost treatment of organic waste. Since 2009 ESCAP in partnership with Waste Concern, a Bangladesh-based Social Business Enterprise, have launched a project on "Pro-poor and Sustainable Solid Waste Management in Secondary Cities and Small Towns in Asia-Pacific" and have piloted decentralized Integrated Resource Recovery Centers (IRRCs) that are locally appropriate and pro-poor facilities to recover economic and ecological value from waste resources. An IRRC uses simple, low-cost, and non-mechanized processes to produce a range of recovered waste products from segregated municipal solid waste and faecal sludge: compost, biogas, plastics, biofuels, and refuse-derived fuel (RDF).

The implementation of an IRRC is built on an inclusive process that engages and facilitates the building of partnerships among various local and national stakeholders, and leverages their capacities and resources. Effective IRRC implementation helps to improve national-local coordination on urban development and waste management policies and programmes, as well as to enhance public awareness and adoption of 3R (reduce, reuse, recycle/recover) practices. The active participation of waste producers in segregating and reducing waste, as well as of waste collectors is important to the success of the IRRC.

An IRRC provides a range of sustainable development benefits that contribute to the achievement of global and regional agendas for sustainable development and climate change mitigation: the 2030 Agenda for Sustainable Development and the Regional Road Map for Implementing the 2030 Agenda for Sustainable Development in Asia and the Pacific; the New Urban Agenda; and the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC).