Situation Assessment Report on

PLASTICS LEAKAGE PREVENTION FROM FORMAL AND INFORMAL RECYCLING FACILITIES

NONTHABURI AND PATTAYA, THAILAND

RRC.AP
Regional Resource Centre for Asia and the Pacific

Regional Knowledge Centre for Marine Plastic Debris

Situation Assessment Report on

PLASTICS LEAKAGE PREVENTION FROM FORMAL AND INFORMAL RECYCLING FACILITIES

Nonthaburi and Pattaya, Thailand

This study was conducted for the Regional Knowledge Centre for Marine Plastic Debris (RKC-MPD), Economic Research Institute for ASEAN and East Asia (ERIA)

ISBN:
Please cite as:
Huno, S. K. M., Nitivattananon, V., Borongan, G., Thu, N.A., Paudel, S., and Tipakornkiat, G. (2024). Situation assessment report on plastic leakage prevention from formal and informal recycling facilities in Nonthaburi and Pattaya City, Thailand. Economic Research Institute for ASEAN and East Asia (ERIA).

Acknowledgements

The authors wish to thank the Regional Knowledge Centre for Marine Plastic Debris (RKC-MPD) and the Economic Research Institute for ASEAN and East Asia (ERIA) for funding and reviewing the draft reports. The authors gratefully acknowledge the input and contributions of a diverse group of experts from Nonthaburi Municipality (Environmental Health Services Divisions, Sanitation and Environmental Quality, Solid Waste and Sewage Management), Pattaya City (Solid Waste and Waste Management Department; Environmental Quality Promotion Department), as well as several junkshop and recycling business owners who participated in the study and review workshops.

Authors
Asian Institute of Technology Regional Resource Center for Asia and the Pacific (AIT RRCAP):
Dr Guilberto B. Borongan, Director and Head, Waste and Resource Management Cluster
Huno Solomon Kofi Mensah, Senior Programme Officer, Waste and Resource Management Cluster

Urban Innovation and Sustainability Program, SERD/AIT
Nyein Aye Thu
Smritee Paudel
Ganjanapetch Tipakornkiat
Prof. Vilas Nitivattananon

Reviewers and Technical Advisors
Economic Research Institute for ASEAN and East Asia (ERIA)
Regional Knowledge Centre for Marine Plastic Debris
Reo Kawamura, Director
Michikazu Kojima, Technical Advisor,
Ayako Mizuno, Programme Manager

Layout and cover design
Lowil Fred Espada, Consultant

List of abbreviations

CCAC	Climate and Clean Air Coalition
MSW	Municipal Solid Waste
PPP	Private-Public-Partnership
BMA	Bangkok Metropolitan Administration
PCD	Control Department
DfE	Design for the Environment
HDPE	High-Density Polyethylene
PP	Polypropylene
PS	Polystyrene
PET	Polyethylene Terephthalate
LDPE	Low-Density Polyethylene
AMS	ASEAN Member States
ASEAN	Association of Southeast Asian Nations
INGOs	International Non-Governmental Organization
FDA	Food and Drug Authority
PCR	Post-Consumer Recycled

Contents

List of Figures

List of Tables

EXECUTIVE SUMMARY

Thailand recognizes the environmental challenges posed by improper plastic waste management, particularly the risk of plastic pollution in water bodies. To address this, Thailand has launched the Plastic Waste Management Action Plan Phase II (2023-2027), emphasizing an integrated approach focusing on production, distribution, consumption, and consumer management. However, understanding the practices of the informal recycling sector and addressing logistical issues in processing are crucial for preventing plastic leakage into marine environments.

The main objective of this study is to examine the current state of plastic waste management and sources of leakage, with a focus on the Nonthaburi Municipality and Pattaya City. This study is particularly concerned with land-based sources of plastic leakage into marine environments. It aims to identify potential sources of plastic leakage and challenges in addressing such leakage, with a special focus on the informal sector. To achieve this, primary data from field visits and stakeholder interviews were collected, along with secondary data from literature reviews.

The results show that informal waste workers play a significant role in collecting and sorting recyclable materials, including plastics. They fill gaps in areas with limited access to formal waste collection, thereby contributing to recycling efforts. However, workers in the informal sector face challenges, such as low wages, poor working conditions, health and environmental risks, and limited access to equipment. The results also show that plastic leakage can occur throughout the value chain, encompassing both formal and informal waste sectors. Challenges to addressing this leakage include lower demand, price fluctuations, weak collaboration between industry stakeholders, improper management of landfills, inadequate collection and sorting systems, raw material availability and costs, skilled labor availability, and technological access. Insufficient recycling rates and improper disposal practices can contribute to environmental pollution.

Nonthaburi Municipality generates a significant amount of waste, approximately 15% of which is plastic. The waste management process involves junkshops that purchase waste and sort it based on plastic types. Unfortunately, the shops do not properly clean the plastic materials before being sent for recycling in Pathum Thani Province. This could lead to plastic leakage during transportation, particularly with low-value waste, which ultimately ends up in landfills. However, the municipality is taking proactive measures to address these issues by conducting random monthly inspections of registered shops.

Pattaya City generates waste from various sources, including tourists, businesses, hotels, and industrial facilities. In similarity to Nonthaburi Municipality, the informal sector plays a significant role in the recycling process by sorting plastic waste according to type. However, the cleaning process is often inadequate, and the collected plastic is sent for recycling in Chonburi Province. As in the case of Nonthaburi, the problem of plastic leakage is particularly associated with low-value waste that ends up in landfills.

As observed in both Nonthaburi and Pattaya, the formal sector primarily focuses on waste collection and disposal, whereas the informal sector plays a significant role in plastic recycling. However, restrictions on the location of junkshops in specific areas have an impact on the waste management system. Furthermore, residents and visitors to the city have limited access to recycling facilities, resulting in the transportation of recyclable materials to external locations. Moreover, recycling waste is a voluntary action without enforcement; thus, the community lacks awareness of recycling processes.

To mitigate the problem of plastic leakage, it is imperative to foster collaboration between public and private sectors. Governments should enact comprehensive legislation to improve the recycling market through incentives, tax breaks, and subsidies. Budget allocation for technological innovation in plastic waste management is important. Furthermore, there is a need to strengthen the infrastructure pertaining to waste management and implement policies that facilitate the enforcement of these potential laws. Simultaneously, proactive measures must be implemented to promote public participation through extensive awareness campaigns and community engagement initiatives.