



Feasibility Study on Plastic Recycling towards A Circular Future in Cambodia

Plastic Recycling in Cambodia and Current Landscape with Opportunities



TABLE OF CONTENTS

LIST OF TABLES	iii
LIST OF FIGURES	iii
LIST OF TEXT BOXES	iv
LIST OF ABBREVIATIONS	v
EXECUTIVE SUMMARY	vii
1. INTRODUCTION.....	1
1.1 Background.....	1
1.2 Methodology and Approach	2
1.3 Expected Outcomes	2
2. OVERVIEW OF PLASTIC WASTE GENERATION, POLICY AND REGULATORY, TECHNOLOGY AND MARKET DYNAMICS IN CAMBODIA	3
2.1 Plastic Waste Generation and Composition	3
2.2 Plastic Waste Collection and Disposal Practices.....	7
2.3 Regulatory & Institutional Landscape	10
2.4 Plastic Recycling Technologies	16
2.5 Plastic Recycling Market.....	17
3. PLASTIC RECYCLING LANDSCAPE IN CAMBODIA.....	20
3.1 Plastic Recycling Value Chain Actors	20
3.2 Scale of Operation of Cambodia's Plastic Recycling Industry	22
3.3 SMEs in Cambodia's Plastic Recycling Industry	23
3.4 SMEs and their Business Models for Plastic Waste Collection, Processing, and Sales	36
4. SME-LED PLASTIC WASTE RECYCLING IN CAMBODIA: CHALLENGES AND OPPORTUNITIES	49
4.1 Challenges: Unpacking the Struggle of SMEs	49
4.2 Opportunities: Unlocking SME Growth and Integration into the Circular Economy	53
5. RECOMMENDATIONS & FUTURE OUTLOOK OF CAMBODIA'S PLASTIC RECYCLING SECTOR	59
6. CONCLUSIONS	61
7. REFERENCES	62
8. ANNEX	68

LIST OF TABLES

Table 2-1 Plastic Waste Generation, Collection, and Disposal Practices in Cambodia (2024)	10
Table 2-2 National Laws and Regulations Governing Plastic Waste Management Across the Value Chain	11
Table 2-3 Comparative Analysis of Recycling Technologies in Cambodia	17
Table 3-1 Recyclable waste purchased by junkshops from 2010 to 2021	22
Table 3-2 SME Classification in Cambodia	23
Table 3-3 Comparative Analysis of Key SMEs in the Cambodian Recycling Market	24
Table 3-4 Summary Table: Case Studies vs. Business Models	48
Table A-1 Questionnaire for Feasibility Study on Plastic Recycling in Cambodia	68
Table A-2 Waste Collection in the City and District Centers of Cambodia in 2021	70
Table A-3 List of Stakeholders on Plastic Recycling in Cambodia	71
Table A-4 SMEs in Plastic Reduce, Reuse, and Recycling in Cambodia	73

LIST OF FIGURES

Figure 2-1 Trends in Municipal Solid Waste and Plastic Waste Generation in Cambodia (2008–2020)	4
Figure 2-2 Municipal Solid Waste Composition among Provinces in Cambodia	5
Figure 2-3 Composition of Plastic Products by Type in Cambodia	6
Figure 2-4 Waste Generation, Collection, and Collection Efficiency across Cambodian Provinces in 2021	8
Figure 2-5 Distribution of Landfills and Incinerators across Cambodian Provinces in 2021	9
Figure 2-6 Institutional Framework for Municipal Solid Waste Management in Cambodia	14
Figure 2-7 Recyclable Plastic Waste Purchase by Junkshops (2010–2021)	19
Figure 3-1 Post-Consumer Plastic Recycling Value Chain	20
Figure 3-2 Behavioral and Social Challenges and Opportunities in Plastic Recycling in Cambodia	21
Figure 3-3 Plastic Waste Collection, Processing, and Recycling at BC Recycling Enterprise, Battambang	25
Figure 3-4 Plastic Waste Collection, Processing, and Recycling at Yan Chamab PET Recycling Enterprise, Battambang	25
Figure 3-5 Plastic Waste Collection, Processing, and Recycling at Lim Vanny Plastic Recycling Enterprise 1, Phnom Penh	26
Figure 3-6 Plastic Waste Collection, Processing, and Recycling at Lim Vanny Plastic Recycling Enterprise 2, Phnom Penh	27
Figure 3-7 Plastic Waste Collection, Processing, and Recycling at Mao Srey Pov Plastic Recycling Enterprise, Phnom Penh	28
Figure 3-8 Plastic Waste Collection, Processing, and Recycling at Jiangxi Jianhong Plastic Recycling Co., Ltd., Phnom Penh	28
Figure 3-9 Plastic Waste Collection, Processing, and Recycling at BK PVC Pipe Company, Kandal	29
Figure 3-10 Plastic Waste Collection, Processing, and Recycling at GOMI Recycle Company, Phnom Penh	30
Figure 3-11 Plastic Waste Collection, Processing, and Recycling at GOMI Recycle Company, Svay Rieng	30
Figure 3-12 Plastic Waste Collection, Processing, and Recycling at Chenda Khmer Recycle Co. Ltd., Phnom Penh	31
Figure 3-13 Plastic Waste Collection, Processing, and Recycling at Man Wah Camstar Plastic Co., Ltd.	32
Figure 3-14 Plastic Waste Collection, Processing, and Recycling at Thorn Van Dy Plastic Recycling Co., Ltd.	32
Figure 3-15 Plastic Waste Collection, Processing, and Recycling at Youn Sina Plastic Waste Buyer Enterprise	33
Figure 3-16 Plastic Waste Collection, Processing, and Recycling at Leang Muy Soing Drinking Water Bottle Manufacturer	34
Figure 3-17 Plastic Waste Collection, Processing, and Recycling at Sen Ry Drinking water bottle Enterprise	35
Figure 3-18 Plastic Waste Collection, Processing, and Recycling at SMLY Plastic Recycling Enterprise	35
Figure 3-19 Plastic Waste Collection, Processing, and Recycling at A1 Plastics Resources Company Limited	36
Figure 3-20 Presence of SMEs in Plastic Recycling Value Chain in Cambodia	37

Figure 3-21 Business Models for Plastic Waste Collection, Processing, and Sales in Cambodia	38
Figure 3-22 TONTOTON's Community-Based Plastic Waste Collection and Recycling Operations in Cambodia	39
Figure 3-23 Only One Planet (OOP)'s Initiative in Cambodia	41
Figure 3-24 Green Lotus Panel Facility in Cambodia	42
Figure 3-25 GOMI Recycle Enterprise in Cambodia	43
Figure 3-26 One Earth – One Ocean (OEEO) Approach in Cambodia.....	44
Figure 3-27 A Cambodian social enterprise, E-Globbal	46
Figure 3-28 Sihanoukville's Zero-Waste Project.....	47
Figure 4-1 SWOT Analysis of SMEs in the Plastic Recycling Market in Cambodia	49
Figure 4-2 Preventing Plastic Diffusion Through Simple Technologies.....	52
Figure 4-3 TONTOTON's Plastic Credit Solution	55

LIST OF TEXT BOXES

Text Box 3-1 Case Studies on Plastic Recycling in Cambodia	24
Text Box 3-2 Case Studies on Successful Plastic Recycling Business Models in Cambodia.....	39
Text Box 4-1 Examples of Government, Private Sector and Donor Financing support to SMEs	54

LIST OF ABBREVIATIONS

3R	Reduce, Reuse, Recycle
Acted	Agency for Technical Cooperation and Development
ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
CA/DA	City/District Authorities
CCOF	Circulate Capital Ocean Fund
CEDAC	Cambodian Center for Study and Development in Agriculture
CGCC	Credit Guarantee Corporation of Cambodia
COMPED	Cambodian Education and Waste Management Organization
CRDT	Cambodian Rural Development Team
EPR	Extended Producer Responsibility
ERIA	Economic Research Institute for ASEAN and East Asia
FFI	Fauna & Flora International
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HDPE	High-Density Polyethylene
HKRITA	Hong Kong Research Institute of Textiles and Apparel Limited
IDP	Industrial Development Policy
IFC	International Finance Corporation
ILO	International Labor Organization
ISWA	International Solid Waste Association
IWWs	Individual Waste Workers
kg	Kilogram
KGCT	Khmer Green Charitable Trust
KHR	Cambodian Riel
kWh	Kilowatt Hours
LDPE	Low-Density Polyethylene
MEF	Ministry of Economy and Finance
MISTI	Ministry of Industry, Science, Technology & Innovation
MoE	Ministry of Environment
MoEF	Ministry of Economic and Finance
MoH	Ministry of Health
Mol	Ministry of Interior
MoP	Ministry of Planning
MoPWT	Ministry of Public Works and Transport
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
NGO	Non-Governmental Organization
NUM	National University of Management
OECD	Organisation for Economic Co-operation and Development
OEOO	One Earth – One Ocean
OOP	Only One Planet
PA	Provincial Authority
PE	Polyethylene
PET	Polyethylene Terephthalate
PLASTICS	Promoting Long-term Approaches for a Sustainable Transformative and Inclusive Circular Economy in Sri Lanka
PP	Polypropylene

PPM	Phnom Penh Municipality
PPPs	Public-Private Partnerships
PS	Polystyrene
PVC	Polyvinyl Chloride
RKC-MPD	Regional Knowledge Centre for Marine Plastic Debris
ROI	Return on Investment
SDPI	Sustainable Development Policy Institute
SMEs	Small and Medium Enterprises
SWM	Sustainable Waste Management
SWOT	Strengths, Weaknesses, Opportunities, and Threats
UNCDF	United Nations Capital Development Fund
UNCRD	United Nations Centre for Regional Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
USD	United States Dollar
V/SC	Value and Supply Chain
WTE	Waste-to-Energy
WWF	World Wildlife Fund
YEA	Young Eco Ambassadors

EXECUTIVE SUMMARY

Plastic waste management is a growing challenge in Cambodia due to rapid urbanization, economic growth, and an increasing reliance on plastic products. Plastic waste makes up a large share, approximately 20–25% of municipal solid waste, especially in urban centers like Phnom Penh, but lacks an extensive collection and structured recycling system. Urban areas have relatively better waste collection coverage, and peri-urban and rural regions often face inconsistent or non-existent services. In these regions, plastic waste is frequently disposed of in open dumps, burned in residential areas, or left uncollected, leading to severe environmental pollution and public health risks.

Cambodia's plastic waste management sector is a complex system involving a diverse range of stakeholders including local businesses and SMEs, government agencies, waste collectors, NGOs, and local communities, each facing unique challenges. The absence of a centralized and efficient recycling system, coupled with a lack of cohesive policies and regulations, hinders the development of a circular economy in Cambodia. Key stakeholders. These diverse stakeholders and actors in plastic recycling value chain provides a founding need for fostering collaboration and driving sustainable waste management practices.

Plastic recycling in Cambodia is largely fragmented and dependent on heavily on the informal waste collectors and Small and Medium Enterprises (SMEs) waste processors and recyclers. These SMEs struggle with financial, technological, regulatory and capacity challenges. These gaps in policy enforcement, market stability, and infrastructure continue to hinder recycling rates. Without substantial investment in advanced recycling technologies, improved waste segregation practices, and formalized support for informal waste collectors, Cambodia risks losing out on the economic and environmental benefits of a circular economy.

Local businesses and SMEs despite facing several challenges are still the backbone of Cambodia's plastic recycling, and the SME-led plastic recycling sector has significant potential to drive sustainable plastic waste management. The key recommended actions to build a more resilient and profitable recycling industry, contributing to environmental protection, job creation, and economic sustainability include.

- **Enabling Policy:** Strengthen policies that promote SME participation in recycling, including incentives and supportive regulations.
- **Access to Finance:** Facilitate access to financing options for SMEs to invest in recycling technologies and infrastructure.
- **Market Development:** Develop markets for recycled products to ensure the economic viability of recycling initiatives.
- **Capacity Building:** Provide training and technical assistance to enhance SMEs' recycling capabilities.
- **Fostering partnerships** with value chain actors to create an inclusive recycling ecosystem.

However, their long-term success depends on access to finance, improved technology, stronger policy support, and market integration. By expanding financial incentives, integrating informal waste workers, and developing international certification programs, Cambodia can strengthen its plastic recycling sector and compete in global markets. With strategic investments, government backing, and cross-sector collaboration, SMEs have the potential to transform plastic waste into economic opportunity, creating jobs, reducing environmental pollution, and fostering sustainable development.

This study of SME-led plastic recycling in Cambodia clearly identifies challenges and potential opportunities to accelerate its transition toward a fully functional circular economy as illustrated by the success of recyclers operating in Cambodia, like GOMI recyclers, social enterprises like TONTOTON's plastic credit model. Strengthening Cambodia's recycling sector requires investing in advanced recycling infrastructure, fostering public-private partnerships, addressing behavioral and social challenges—such as consumer perceptions of recycled products. Integrating SMEs into Cambodia's plastic recycling sector presents a strategic opportunity to address environmental challenges, promote sustainable economic growth, and enhance community well-being.

1. INTRODUCTION

1.1 Background

Plastic pollution is one of the most critical environmental challenges of the 21st century. With over 400 million tonnes of plastic produced annually, 40% of which is for single-use packaging United Nations Environment Programme [UNEP] 2021. The environmental, economic and social impact of plastic pollution is profound. The breakdown of plastic into microplastics further intensifies pollution, as these particles infiltrate ecosystems and food chains by affecting both wildlife and human health.

Studies have showed Southeast Asia, including Cambodia, significantly contributes to global marine plastic pollution, due to rapid urbanization, economic growth, and a rising consumer culture favoring disposable products. In urban centers like Phnom Penh, plastic waste constitutes a substantial portion of municipal solid waste (MSW), which is often mismanaged through open dumping and burning due to insufficient collection systems. This leads to environmental contamination and public health risks, particularly affecting vital ecosystems such as the Tonle Sap Lake (Jambeck *et al.* 2015; UNEP 2021; World Bank 2022; Ministry of Environment, Cambodia [MoE] 2020; Lebreton *et al.* 2018). Plastic waste generation and management vary significantly across Cambodia's provinces, reflecting differences in population, economic activities, geographic contexts, and existing waste management systems and infrastructure. Provinces such as Banteay Meanchey, Battambang, and Kampong Chhnang depend on agriculture and agro-industries and generates plastic wastes from these sectors, while coastal provinces like Kep and Koh Kong are sources to marine plastic pollution that threaten marine ecosystems whereas Siem Reap, a major tourist destination, faces infrastructure gaps that contribute to pollution near heritage sites. Comparatively, Phnom Penh, the capital city, has a relatively organized system but struggles with rapid urban plastic waste generation (United Nations Development Programme [UNDP] 2019).

In Cambodia, the informal sector – inclusive of individual waste workers (IWWs) to small and medium enterprises (SMEs) play a crucial role in plastic waste collection and recycling. There is an estimated 10,000 – 15,000 informal waste workers involved in collecting, sorting, and selling recyclables (International Finance Corporation [IFC] 2019). Similarly, SMEs play a pivotal role in plastic waste recycling due to their adaptability, community engagement, and capacity to implement localized waste management solutions. In the context of low- and medium-income countries, the IWWs and SMEs bridge gaps by participating in waste collection, sorting, and preliminary recycling, particularly where formal systems are inadequate (United Nations Industrial Development Organization [UNIDO] 2017; Asian Development Bank [ADB] 2020; International Labor Organization [ILO] 2015).

Despite significant contribution of the IWWs in plastic waste collection, sorting and recycling, these face challenges such as lack of legal recognition, unsafe working conditions, limited access to markets and low economic returns due to reliance on intermediaries. SMEs also face challenges such as lack of funding, regulatory hurdles, manual and outdated technology and inadequate mentorship that hinders leveraging the SMEs to take a leap into circular plastic economy. Therefore, integrating the informal sector and SMEs into a circular economy framework seems the way forward to enhance recycling operational efficiency, create jobs, ensure fair compensation, promote economic resilience and improve public health and environmental outcomes (Wilson and Cheeseman 2006; Medina 2007; Chaturvedi, Arora and Saluja 2015; Dias 2016). Additionally, empowering SMEs can stimulate local economies, reduce dependence on virgin plastic materials, and integrate circular economy principles into the country's waste management system. Integrating SMEs into plastic recycling value chain, however, requires well thought strategic pathways, inclusive policy reforms, knowledge and capacity building of SMEs, and networking and collaboration opportunities that connect SMEs with relevant industry experts, and financing and funding agencies etc.

This study aims to assess the SME-led plastic recycling initiatives in Cambodia by exploring the role of IWWs and SMEs in plastic recycling value chain, and examining their business model and market access, studying operating models, technical, financial and organizational feasibility for expanding and integrating their role in a formal circular plastic economy framework.

1.2 Methodology and Approach

The study took the mixed-methods approach, where a combination of qualitative and quantitative tools was used for data collection. Data was gathered from SMEs, waste collectors, local authorities, and community representatives.

Data Collection

- **Primary data:** Collected through direct interviews, surveys, and engagement with SMEs, waste collectors, and industry experts. The survey questionnaire is attached to **Annex-Table A.1**.
- **Secondary data:** Reviewed from literature, industry reports, government policies, and global case studies on plastic recycling to assess market demand, operational barriers, and economic feasibility.

Analytical Frameworks

- **Stakeholder Analysis and Mapping:** Identified key stakeholders, their roles, and influence on plastic waste management to ensure the recommendations align with industry needs and policy priorities.

1.3 Expected Outcomes

The ultimate objective of this study is to establish a foundation for enhancing and increasing SME involvement in plastic waste recycling by creating pathways for formalizing and integrating it into a formal economy in Cambodia, thereby supporting environmental protection, economic growth, and social development. The expected outcomes of this study are to:

- Provide evidence-based insights by gathering stakeholder perspectives to identify the role of SMEs, challenges, opportunities, economic and technical factors, environmental implications and key market dynamics of recycling.
- Inform policy makers to make enabling policy decisions that support the growth of SMEs in the waste recycling industry.
- Develop a model for SME-driven recycling initiatives in Cambodia with supportive policy alignment, technology access, funding opportunities, and capacity-building initiatives, that can be scaled, adapted and replicated to other countries in the region.

2. OVERVIEW OF PLASTIC WASTE GENERATION, POLICY AND REGULATORY, TECHNOLOGY AND MARKET DYNAMICS IN CAMBODIA

2.1 Plastic Waste Generation and Composition

Cambodia generates approximately 0.75 kg of waste per capita per day (MoE 2024), however, this rate varies significantly based on location, highlighting differences in waste production between urban and rural settings:

- 0.8 – 1.5 kg/capita/day in the capital, Phnom Penh, where high population density and commercial activities drive waste accumulation.
- 0.6 – 0.8 kg/capita/day in urban cities and districts, where growing economic centers contribute to increasing waste streams.
- 0.3 – 0.5 kg/capita/day in suburban and rural districts, where lower consumption levels and less industrial activity result in comparatively lower waste production.

Such difference in waste generation across the country shows that the Cambodia's waste generation landscape is shaped by the complex interaction of urbanization, economic growth, and consumption habits.

Cambodia produces over 3,500 tonnes of municipal waste daily, with 20% of it being plastic (SEA Circular 2020). In 2024, Cambodia generated an estimated 936,225 tons of plastic waste annually, with 61% of this waste originating from mixed sources, including households, business establishments (street vendors, markets, restaurants, food delivery services), the tourism sector, and industrial operations. Unfortunately, much of this waste is collected and directed toward 195 dumpsites (most covering less than five hectares) and 12 controlled landfills, emphasizing the country's ongoing struggle with sustainable waste management. Plastic waste in Cambodia is composed of a wide range of materials, with the most commonly discarded plastics including:

- High-Density Polyethylene (HDPE) – Frequently found in plastic bags, bottles, and containers.
- Low-Density Polyethylene (LDPE) – Used for shopping bags, wraps, and packaging films.
- Polyethylene Terephthalate (PET) – Commonly used in bottled water, soft drinks, and beverage containers.
- Polypropylene (PP) – Found in food containers, straws, takeaway boxes, and woven bags.
- Polystyrene (PS) – Primarily used in foam packaging, disposable food containers, and cups.

Figure 2.1 presents the trends in MSW and plastic waste generation in Cambodia between 2008 and 2020 which was calculated based on Pheakdey et al. 2022. The data highlights an increasing trend in total waste generation, rising steadily from approximately 3.71 million tons in 2008 to about 4.78 million tons by 2020. Alongside overall waste growth, plastic waste generation also exhibited a notable upward trend, increasing from approximately 0.73 million tons in 2008 to about 0.96 million tons in 2020. It also presents per capita waste generation rates, which similarly increased from 0.73 kg/day in 2008 to 0.78 kg/day in 2020 for MSW. Plastic waste generation per capita showed a moderate increase from 0.15 kg/day in 2008 to 0.16 kg/day in 2020, indicating a relatively stable, albeit slightly increasing, rate over this period. The proportion of plastic waste as part of total MSW is visually notable, reflecting persistent plastic usage and challenges related to plastic waste management. The consistent growth underscores the critical need for effective plastic recycling initiatives, policy interventions, public awareness, and improved infrastructure to manage and reduce plastic waste in Cambodia sustainably.

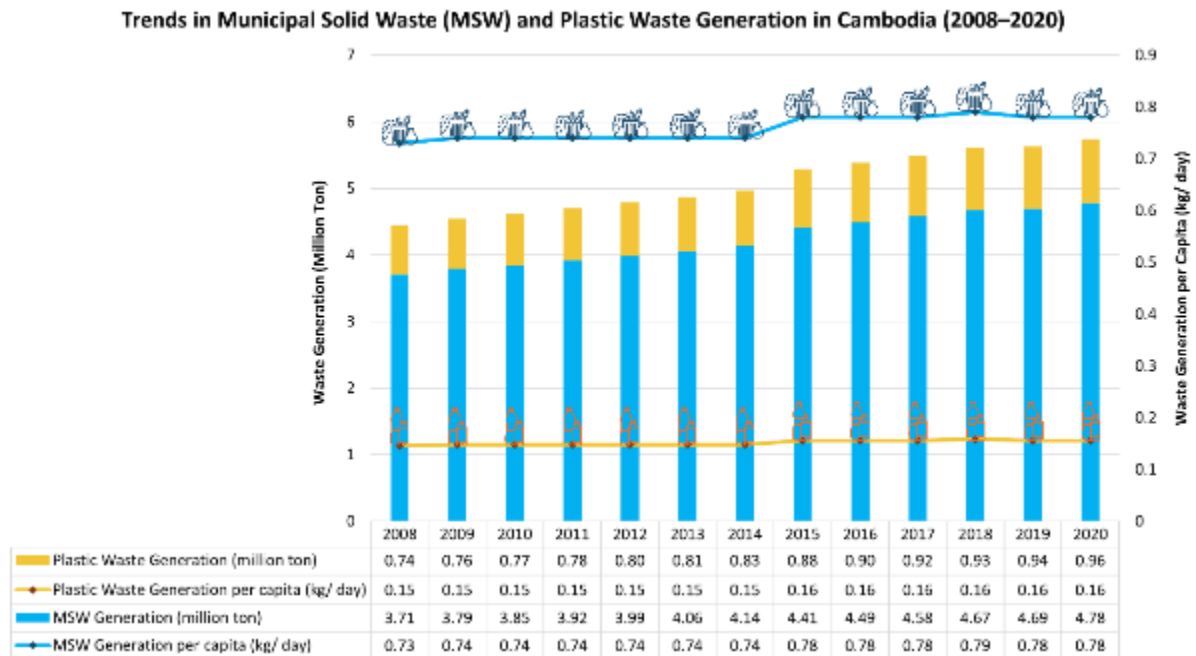


Figure 2-1 Trends in Municipal Solid Waste and Plastic Waste Generation in Cambodia (2008–2020)
(Calculated based on (Pheakdey et al. 2022).)

Figure 2.2 illustrates the composition of MSW in major Cambodian cities with by highlighting the proportion of plastic waste compared to other waste categories. The figures suggest considerable usage of plastics within the locality, with national average plastic waste in MSW at 20%. Such a significant proportion of plastic in MSW demonstrates substantial opportunities and needs for targeted recycling and plastic waste management strategies.

- **National Perspective:**
Across Cambodia, plastic waste accounts for 20% of the total MSW, indicating its prominent role as the second-largest waste component after food waste (55%). This highlights the significant recycling potential and necessity for targeted plastic waste management strategies nationwide.
- **City-Level Insights:**
 - **Phnom Penh and Battambang:** Plastic waste accounts for approximately 21% of MSW. This high proportion indicates the substantial generation of plastic waste in urbanized regions with active commerce and consumption patterns.
 - **Siem Reap:** Plastic constitutes 11% of MSW, slightly lower compared to Phnom Penh and Battambang. However, given Siem Reap's tourism-based economy, managing plastic waste here is crucial for maintaining environmental quality and tourism appeal.
 - **Kampong Cham, Kampong Thom and Pursat:** Plastic comprises 12 –14% of MSW. This proportion.
 - **Kampong Chhnang:** The area shows significantly low percentage (3%) of plastic waste, indicating either different consumption behaviors, inadequate reporting accuracy, or limited sorting efficiency.

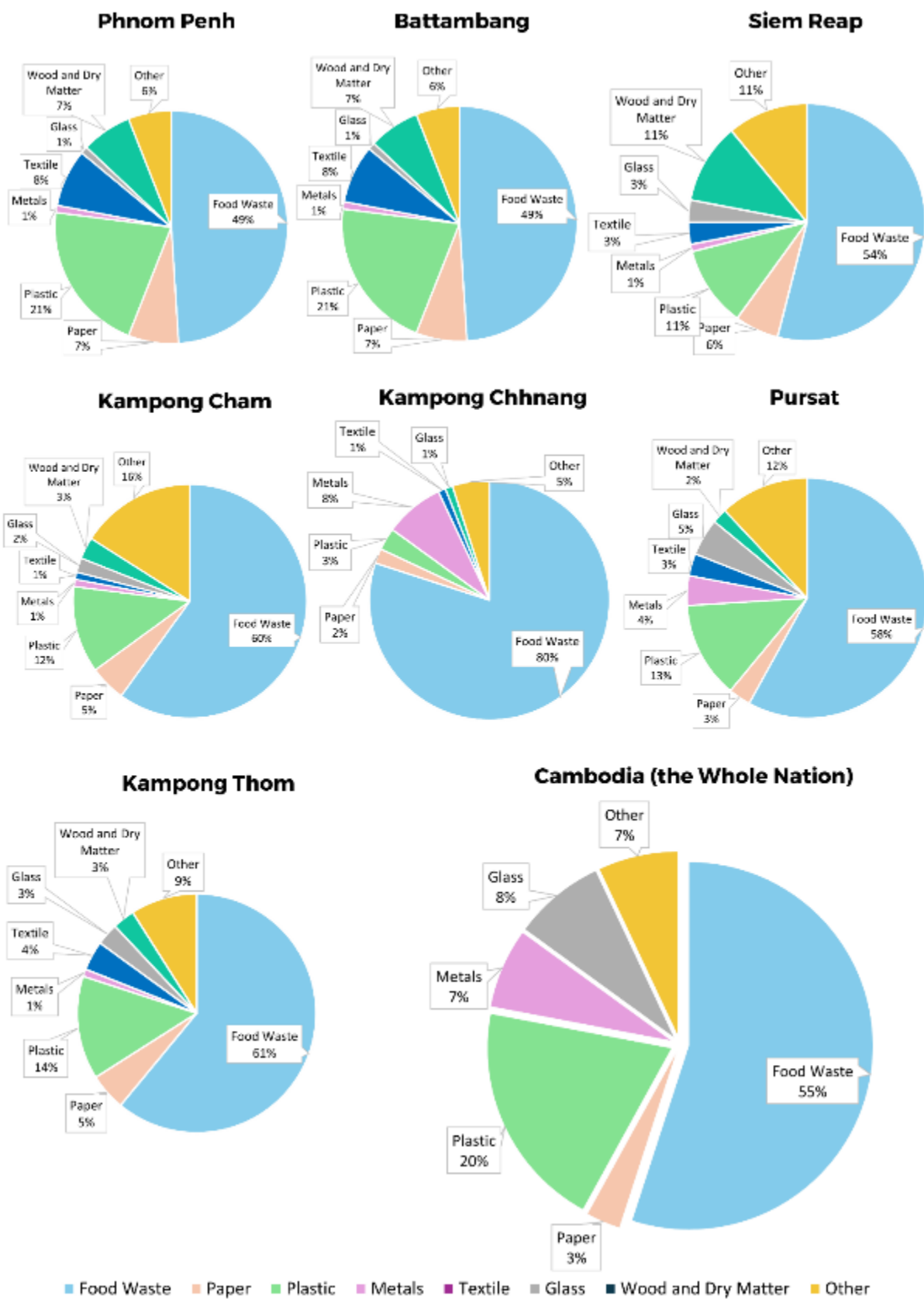


Figure 2-2 Municipal Solid Waste Composition among Provinces in Cambodia
(Data Source: Pheakdey et al. 2022)

The breakdown of plastic product types contributing to plastic waste in Cambodia based on the data from (MoE 2021) is shown in **Figure 2.3**. It highlights the dominance of certain products, indicating priority areas for intervention and recycling efforts.

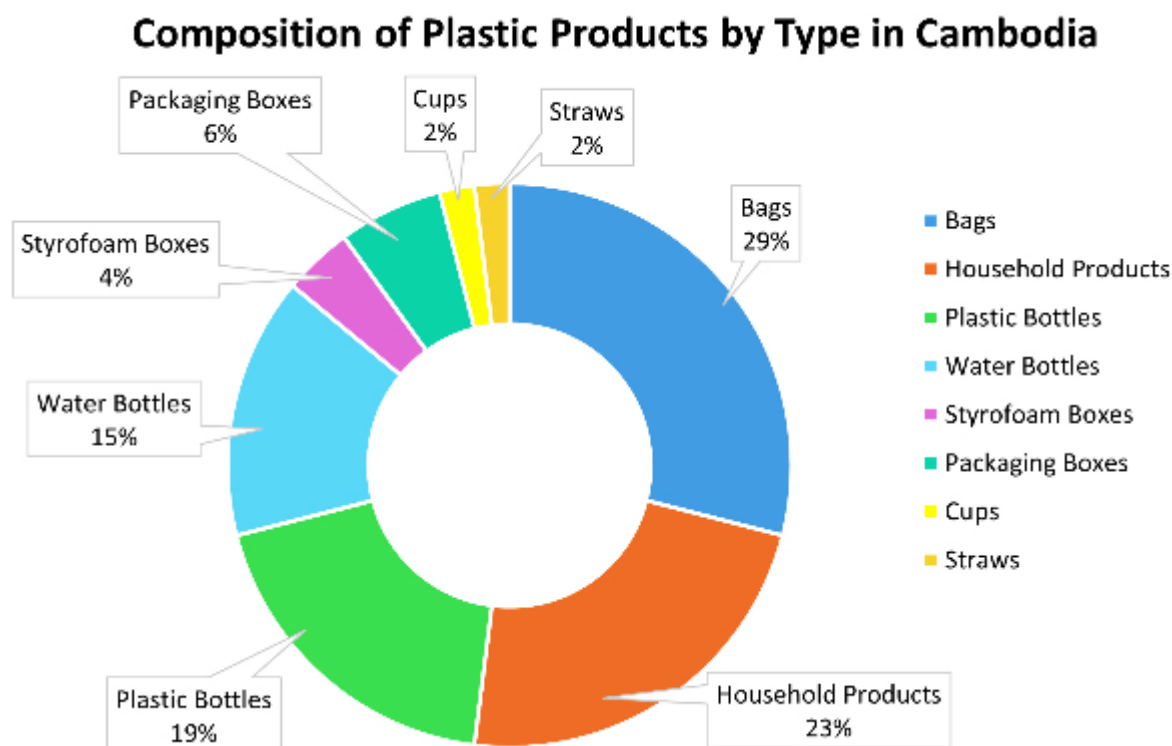


Figure 2-3 Composition of Plastic Products by Type in Cambodia
(Data Source: MoE (2021))

- **Plastic Bags (29%)**

Plastic bags represent the highest proportion of plastic waste (29%), reflecting their widespread use in retail, food markets, and everyday transactions due to convenience, affordability, and consumer habits. Their high usage emphasizes the importance of targeted reduction strategies, awareness campaigns, and alternative packaging solutions.

- **Household Products (23%)**

Household products constitute a significant portion (23%) by highlighting consumer-level plastic consumption from daily household activities, for example, plastic furniture, laundry baskets, hangers, toiletries containers, cleaning tools, etc. Effective strategies here may include promoting eco-friendly products, reusable items, and improved recycling infrastructure at the community level.

- **Plastic Bottles (19%) and Water Bottles (15%)**

Collectively, plastic bottles (34% total) represent a considerable amount of plastic waste by indicating high consumption of beverages and bottled water. Targeted interventions such as deposit-return schemes, recycling incentives, and bottle refill initiatives could effectively reduce this type of plastic waste.

- **Packaging Boxes (6%) and Styrofoam Boxes (4%)**

Packaging materials, including packaging boxes (6%) and Styrofoam boxes (4%), are frequently used in the food industry and retail sectors. Encouraging sustainable alternatives or enhancing the recycling capacity for these specific materials could further mitigate waste issues.

- **Cups and Straws (each 2%)**

Plastic cups and straws are smaller yet environmentally impactful contributors to overall plastic waste. Public education campaigns encouraging reusable cups and straw alternatives could help reduce their usage.

2.2 Plastic Waste Collection and Disposal Practices

Waste collection services in Cambodia vary significantly between urban and rural areas, with cities having better-organized systems while rural areas often lack formal waste management. In most provinces, waste collection is managed by private contractors who operate predominantly in urban centers and around market areas. Rural regions have minimal to no formal waste collection services, leading to widespread practices of open dumping and burning. Phnom Penh, Siem Reap, and Sihanoukville have the most structured waste collection systems due to their higher levels of urbanization and tourism, while remote provinces like Preah Vihear and Mondul Kiri have limited services (UNDP 2019). The accessibility and efficiency of waste collection services differ across provinces.

UNDP (2019) highlights that Phnom Penh has the highest number of waste collection vehicles, exceeding 1,000 trucks, while smaller provinces like Koh Kong and Kratie operate with fewer than 50 vehicles. Many waste collection systems rely on a mix of trucks, motor-trailers, and push carts, with the latter being more common in provinces with less developed infrastructure. However, waste collection coverage remains inconsistent, and even in urban areas, not all households benefit from regular waste collection services. The MSW generation and collection across various Cambodian provinces (Pheakdey et al. 2022) in the year 2021 is summarized in **Figure 2.4**. Overall, Cambodia generates approximately 7,963 tons/day of municipal solid waste, with a nationwide average collection efficiency of 72%, by resulting in around 5,749 tons/day collected as shown in detail in **Annex-Table A.2**.

- **Waste Generation and Collection Volumes:**

Phnom Penh stands out significantly for generating and collecting the highest amounts of MSW, approximately 3,076 tons/day, with an impressive 92% collection efficiency. Other provinces with notable waste generation include Svay Rieng (381 tons/day, 59% efficiency) and Pursat (331 tons/day, 91% efficiency).

- **Collection Efficiency Highlights:**

- Province like Koh Kong achieves a collection efficiency of 100% with suggesting effective waste management practices, even though their waste generation volumes are relatively lower compared to larger urban areas.
- Conversely, provinces like Prey Veng (16%), Takeo (19%), and Kampong Chhnang (33%) report very low collection efficiencies by indicating significant challenges and highlighting the urgent need for enhanced waste management infrastructure and services.

Provinces with high waste generation but lower collection efficiency represent priority areas requiring targeted improvements, including infrastructural enhancements, increased funding, and awareness programs. Conversely, regions like Phnom Penh and Pursat demonstrate more effective waste management practices that could serve as models for replication in other provinces.

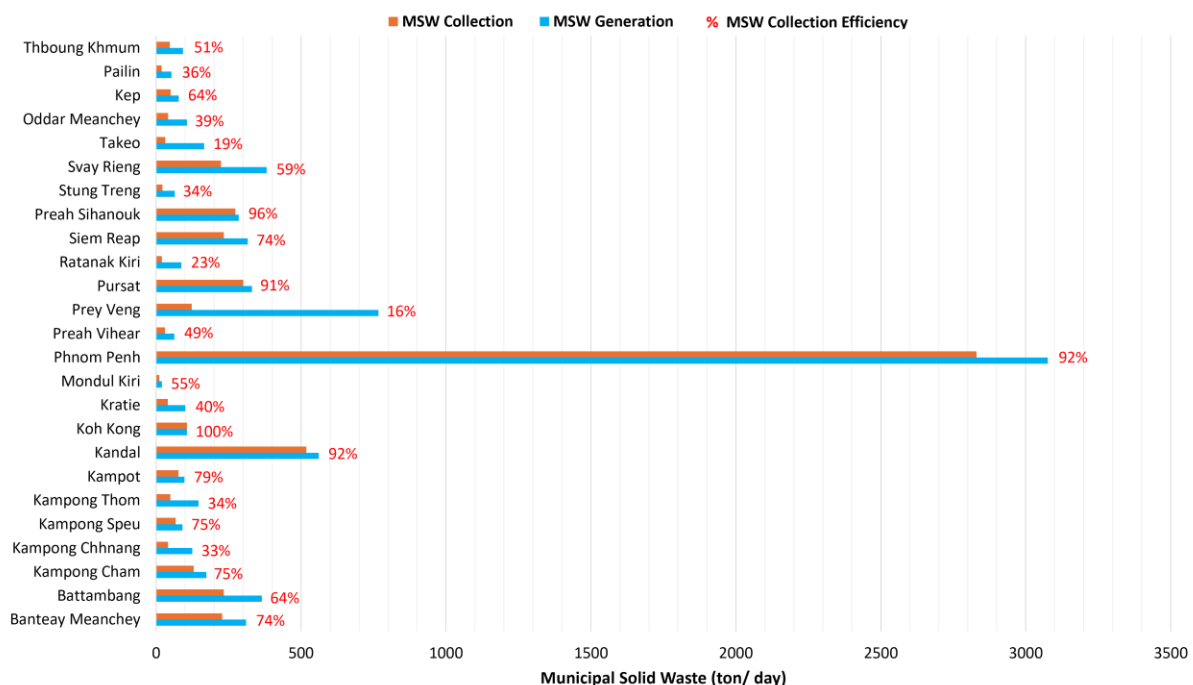


Figure 2-4 Waste Generation, Collection, and Collection Efficiency across Cambodian Provinces in 2021
(Data Source: Pheakdey et al. (2022))

Another major issue in waste collection is the management of dumpsites and landfills. Most provinces rely on open dumpsites, many of which have been in operation for over three years without proper management. The presence of bulldozers and waste processing equipment is limited, making waste disposal inefficient. In some provinces, particularly those with strong industrial sectors, privately owned dumpsites are used for waste disposal, but these are not necessarily regulated or environmentally sound. A few provinces have recently developed new dumpsites, but most still lack engineered landfills that could improve waste management practices (UNDP 2019).

The infrastructure dedicated to waste disposal in Cambodia primarily comprises landfills and incinerators:

- **Landfills:**

Cambodia currently operates 164 landfills by covering a total area of approximately 701.09 hectares (**Annex-Table A.2**).

- Kampong Thom has the largest landfill area (75 hectares), significantly exceeding other provinces, followed by Kampong Speu (31.1 hectares) and Kampong Chhnang (23.9 hectares).
- Phnom Penh, despite its high waste volume, operates multiple smaller landfills totaling substantial disposal capacity but distributed across different locations.
- Several provinces, including Preah Sihanouk, Stung Treng, and Banteay Meanchey have large landfill areas, suggesting a strong dependency on landfill disposal.
- Provinces with smaller landfill areas (e.g., Pursat, Battambang, Kampot, Kep) face limited landfill capacity, potentially resulting in insufficient waste disposal infrastructure and greater environmental risks such as open dumping or improper disposal.

- **Incinerators:**

Cambodia has a total of 54 incinerators, distributed unevenly among provinces.

- Provinces such as Siem Reap and Takeo have the highest number (4 incinerators each), reflecting significant localized infrastructure investment to manage waste volume efficiently.
- Provinces including Stung Treng, Ratanak Kiri, and Kratie have minimal or no incineration facilities (0–1 facility), indicating potential waste management infrastructure gaps and reliance on alternative methods such as landfilling or open dumping.
- Battambang, Kampong Thom, and Preah Vihear possess moderate numbers of incinerators (3 facilities each), potentially representing active efforts toward controlled waste management, although capacity may still be insufficient given their relatively higher waste generation.

The spatial distribution of waste management sites across Cambodia varies significantly, as illustrated in **Figure 2.5**.

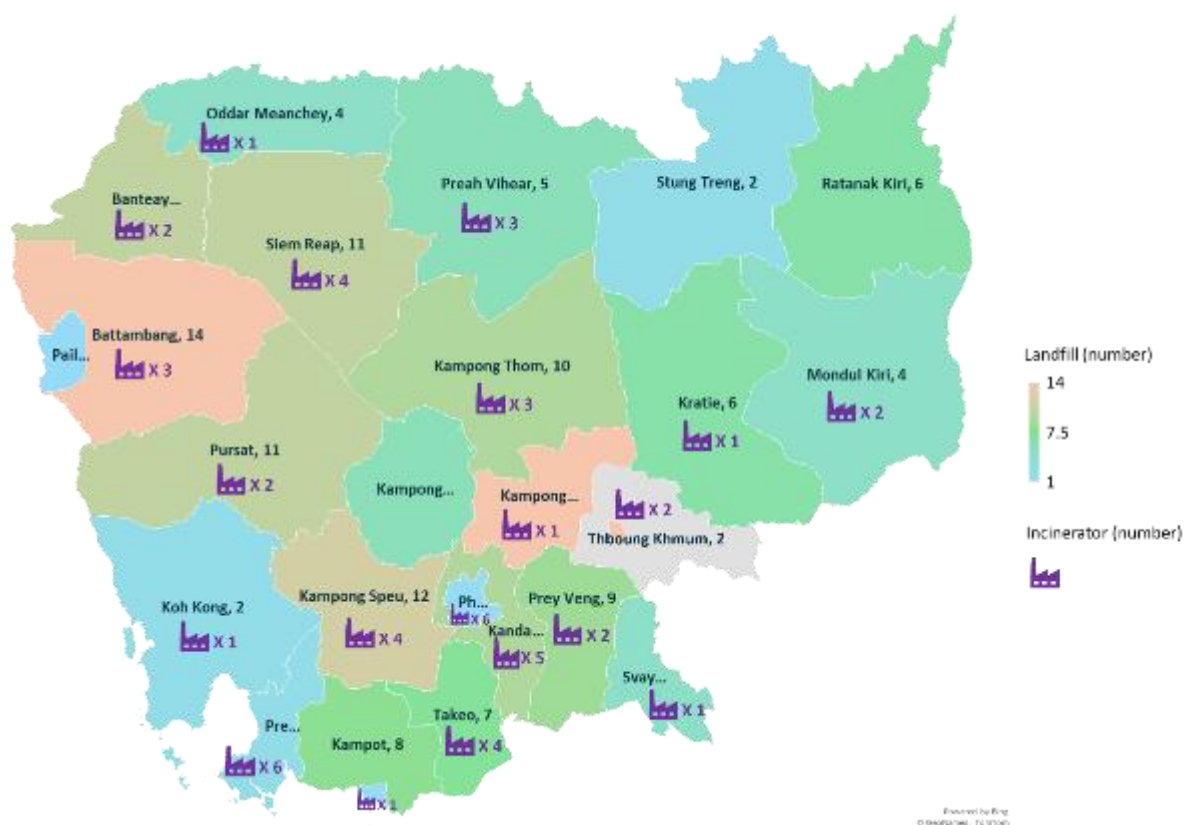


Figure 2-5 Distribution of Landfills and Incinerators across Cambodian Provinces in 2021
(Data Source: Pheakdey et al. (2022))

The existing waste disposal infrastructure shows a heavy dependence on landfills, highlighting opportunities for enhanced recycling and waste-to-energy infrastructure developments. Provinces with fewer or no incinerators face a heightened risk of inadequate waste management and increased environmental pollution. This highlights the need for equitable infrastructure distribution and investment in provinces currently underserved, which can substantially improve national waste management efficiency.

In Cambodia the challenge of plastic waste management remains a pressing concern, with significant portions of waste left uncollected or improperly disposed of, as estimated in **Table 2.1**.

Table 2-1 Plastic Waste Generation, Collection, and Disposal Practices in Cambodia (2024)

Category	Value
Population	17,100,000 ¹
Waste Generation Rate (Kg/capita/day)	0.75
Total Waste Generation (Tons/year)	4,681,125
Waste Collected for Disposal (Tons/year)	2,843,961
Collected Recyclable Waste for Recycling (Tons/year)	234,748.36
Waste Disposed Illegally (Tons/year)	1,602,416
Plastic Waste Generation (Tons/year)	936,225
Plastic Waste to Landfill (Tons/year)	568,792
Plastic Waste Collected for Recycling (Tons/year)	36,541 ²
Plastic Waste Disposed Illegally (Tons/year)	330,892

(Data Source: Estimated by this study based on collected data)

Only 5% of plastic waste is collected for recycling, accounting for 20% of the total recyclable waste collected. Alarming, 35% of plastic waste is either dumped into open environments, burned, or discarded in water bodies, particularly in areas lacking proper waste collection services.

2.3 Regulatory & Institutional Landscape

Cambodia has been actively developing its policy and regulatory framework to address plastic waste management. Key national and regional policies aim to reduce plastic pollution, enhance circular economy approaches, and improve waste management infrastructure (Association of Southeast Asian Nations [ASEAN] 2024; Regional Knowledge Centre for Marine Plastic Debris [RKC-MPD] 2025).

2.3.1 ASEAN and Regional Initiatives

- **ASEAN Regional Action Plan for Combating Marine Debris (2021–2025)**

A regional strategy that promotes policy harmonization, private sector involvement, and investment in waste infrastructure (ASEAN 2021).

- **ASEAN Declaration on Plastic Circularity (2024)**

This declaration promotes a full life-cycle approach to plastic waste, encouraging policy alignment and financial support for sustainable initiatives (ASEAN 2024).

2.3.2 National Policies and Regulations

The following **Table 2.2** provides an overview of key national laws and regulations related to plastic waste management in Cambodia, categorizing them based on different stages of the value chain. It highlights the legal provisions governing plastic production, import/export restrictions, consumption reduction, waste collection, recycling, disposal, and extended producer responsibility (EPR) initiatives.

Cambodia has established a range of laws, sub-decrees, policies, and guidelines that govern various stages of the plastic value chain, with a primary focus on environmental protection and waste management. While these frameworks lay a foundation for regulating plastic use and disposal, they offer limited direct support or incentives for SMEs involved in recycling. Most instruments address end-of-life management, and emerging strategies like the circular economy and EPR policies hold potential for SME engagement. However, clearer implementation mechanisms and targeted support are still needed to enable SMEs to effectively participate in plastic recycling efforts.

¹ United Nations Population Fund (2025). *World Population Dashboard: Cambodia*. <https://www.unfpa.org/data/world-population/KH?utm>.

² Ministry of Environment (2024). *Workshop sums up the results of environmental protection work in 2024 and work directions for 2025*.

Table 2-2 National Laws and Regulations Governing Plastic Waste Management Across the Value Chain

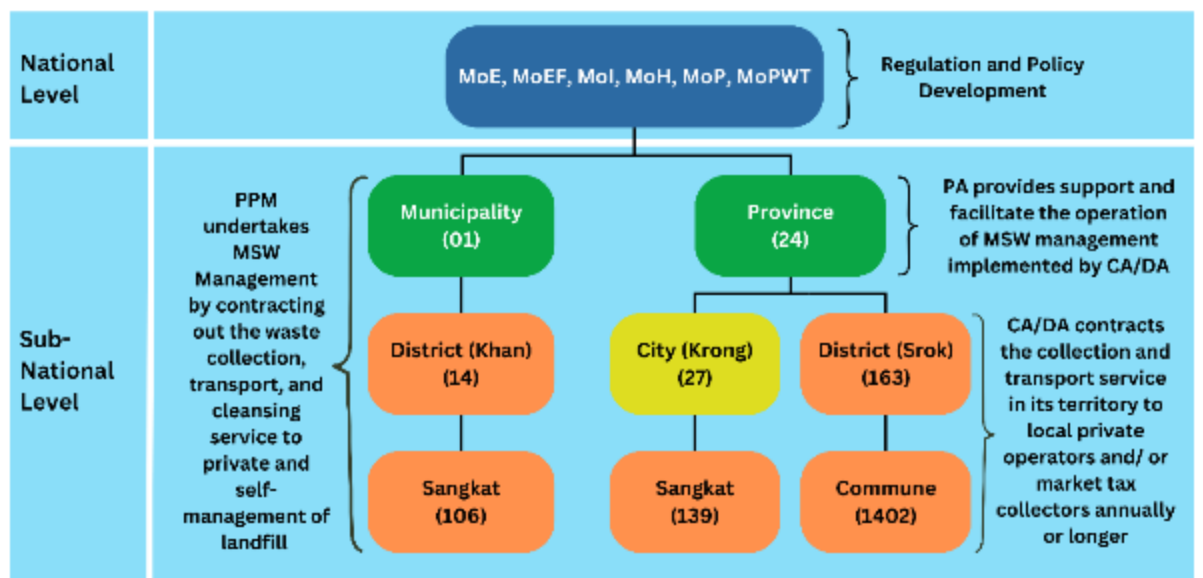
Laws and Regulations	Production and Manufacturing	Consumption	Waste Management/ End-of-life	Trade
Laws				
Law on Environmental Protection and Natural Resource Management (1996, updated 2023)	✗	✗	✓	✗
Code on Environment and Natural Resources (2023)	✓	✓	✓	✓
Law on the Management of Quality and Safety of Products and Service (2000)	✓	✗	✗	✗
Sub-Decrees				
Sub-Decree on the Organization and Function of the Department of Hazardous Substance Management (Sub-Decree No. 446, 2000)	✓	✗	✓	✗
Sub-Decree on Management of Plastic Bags (Sub-Decree No. 168, 2017)	✗	✓	✓	✗
Sub-Decree on Solid Waste Management (Sub-Decree No. 36, 1999)	✗	✗	✓	✗
Sub-Decree on Urban Solid Waste Management (Sub-Decree No. 113, 2015)	✗	✗	✓	✗
Sub-Decree on the Water Pollution Control (Sub-Decree No. 27, 1999)	✗	✗	✓	✗
Sub-Decree on Management over Electrical Equipment and Electronic Waste (Sub decree No. 16, 2016)	✓	✗	✓	✗
Sub-Decree on the Air Pollution Control and Noise Disturbance (Sub-Decree No. 42, 2000)	✓	✗	✓	✗
Sub-Decree on Environmental Impact Assessment Process (Sub-Decree No. 72, 1999)	✓	✗	✓	✗
Sub-Decree on the Enforcement of the List of Prohibited and Restricted Goods (Sub-Decree No.17, 2020)	✗	✗	✗	✓

Laws and Regulations	Production and Manufacturing	Consumption	Waste Management/ End-of-life	Trade
Policies				
Industrial Development Policy (IDP) 2015–2025	✓	✗	✗	✗
Urban Solid Waste Management Policy 2020–2030	✗	✗	✓	✗
Extended Producer Responsibility (EPR) Policy (Under development)	✓	✗	✓	✗
Strategies and Action Plans				
National Circular Economy Strategy and Action Plan (2021)	✓	✓	✓	✓
Circular Strategy on Environment 2023–2028	✓	✓	✓	✓
Draft National 3R (reduce, reuse, recycle) Strategy on Waste Management in Cambodia (2006)	✗	✓	✓	✗
Declarations				
Declaration on Health Care Waste Management (2008)	✗	✗	✓	✗
Joint Declaration between Ministry of Environment (MoE) and Ministry of Interior (Mol) on Household Waste Management	✗	✓	✓	✗
Declaration No. 83 Inter-Ministerial Declaration between Ministry of Interior (Mol) and Ministry of Environment (MoE) on Solid Waste Management in Provincials/Municipalities of Cambodia (2003)	✗	✗	✓	✗
Declaration No. 387 on Enforcement to Standard Level the Amount of Toxic or Hazardous Substance (2015)	✓	✗	✓	✗

Laws and Regulations	Production and Manufacturing	Consumption	Waste Management/ End-of-life	Trade
Guidelines				
Environmental Guideline on Solid Waste Management (2006)	✗	✗	✓	✗
Guideline on Plastic Waste Management (2020)	✗	✗	✓	✗
Guideline on Solid Waste Management at Factories, Enterprises & Companies (2003)	✓	✗	✓	✗
Guideline on Sludge Waste Management at Factories-Enterprises (2000)	✓	✗	✓	✗
Guidelines on Healthcare Waste Management (2011)	✗	✗	✓	✗
Others				
Prakas on the Organization and Functioning of the Environmental Provincial-Municipal Department	✗	✗	✓	✗
Prakas on the Delegation of Responsibilities to Provincial-Municipality Departments by Implementation of Sub-Decree on Monitoring of Water Pollution and Waste Management	✗	✗	✓	✗
Direction No. 87 on Industrial Hazardous Waste Management (2000)	✓	✗	✓	✗

(Compiled from Lyons et al. (2020); RKC-MPD (2025)).

Figure 2.6 illustrates the Municipal Solid Waste (MSW) management structure in Cambodia by highlighting the roles of national and sub-national authorities in overseeing waste collection, transportation, and disposal. At the national level, key ministries, including the Ministry of Environment (MoE), Ministry of Economic and Finance (MoEF), Ministry of Interior (MoI), Ministry of Health (MoH), Ministry of Planning (MoP), and Ministry of Public Works and Transport (MoPWT), are responsible for policy development, regulation, and strategic planning for waste management. At the sub-national level, the waste management system is divided into municipalities (Phnom Penh) and provinces (24 total). Phnom Penh Municipality (PPM) contracts private companies for waste collection, transportation, and landfill management, ensuring services in urban areas. Meanwhile, provincial authorities (PA) support the City/District Authorities (CA/DA) in managing MSW, including contracting private waste collection services or market tax collectors to handle waste collection and transportation. The structure further breaks down into districts (Khan and Srok), cities (Krong), communes, and sangkats, reflecting the decentralized nature of MSW management. Phnom Penh has one municipality with 14 districts (Khan) and 106 sangkats, while provinces contain 27 cities, 163 districts, 139 sangkats, and 1,402 communes. Each administrative level plays a role in ensuring waste collection, transport, and disposal services. Overall, this system reflects Cambodia’s approach to multi-level waste governance, where the national government provides policy direction, and local authorities implement operations through contracted services. However, coordination challenges, enforcement gaps, and disparities in waste collection services across regions remain key issues in achieving effective waste management (Pheakdey et al. 2022).



Note: MoE (Ministry of Environment), MoEF (Ministry of Economic and Finance), MoI (Ministry of Interior), MoH (Ministry of Health), MoP (Ministry of Planning), MoPWT (Ministry of Public Work and Transportation), PPM (Phnom Penh Municipality), PA (Provincial Authority), CA/ DA (City/ District Authority)

Figure 2-6 Institutional Framework for Municipal Solid Waste Management in Cambodia
(Adapted from Pheakdey et al. 2022)

The key stakeholders actively involved in plastic waste management in Cambodia are the Ministry of Environment (MoE), CINTRI (private sector), NGOs such as the Cambodian Education and Waste Management Organization (COMPED) and TONTOTON. Additionally, international organizations play crucial roles in supporting Cambodia's plastic waste management efforts. In academia, the National University of Management (NUM) collaborates with the UNDP on relevant projects (Mahidol University 2024a). The detailed key stakeholders are described in **Annex-Table A.3**.

While Cambodia has been actively strengthening its policy and regulatory framework to address plastic waste, significant gaps and challenges remain throughout the plastic value chain. These limitations hinder the effective implementation of existing regulations and slow the transition

toward a circular economy. The primary challenges in Cambodia's plastic waste management framework include institutional coordination issues, enforcement weaknesses, inadequate recycling infrastructure, low public engagement, and financial constraints.

1. Weak Institutional Coordination and Decentralized Waste Management

Cambodia's waste management responsibilities are decentralized, with local municipalities overseeing urban waste collection and disposal. However, there is weak coordination between ministries, provincial authorities, and municipal waste management entities, leading to inconsistencies in policy implementation and enforcement (RKC-MPD 2025). The absence of an integrated national framework that effectively links waste collection, sorting, and recycling efforts across different governance levels remains a significant barrier to efficient plastic waste management.

2. Limited Enforcement of Waste Regulations

Although Cambodia has established several sub-decrees and environmental policies to regulate plastic production, consumption, and disposal, the enforcement of these regulations remains inadequate. Key waste management laws, such as the Sub-Decree on Plastic Bag Management (2017) and the Urban Solid Waste Management Policy (2020–2030), face weak monitoring and compliance mechanisms. Illegal dumping and improper waste disposal persist due to a lack of enforcement capacity, insufficient inspection resources, and limited penalties for non-compliance. Without stronger monitoring frameworks and compliance incentives, plastic bans and recycling mandates will remain ineffective.

3. Inadequate Recycling Infrastructure and Dependence on Informal Waste Sector

Cambodia's recycling sector remains highly informal, with waste pickers ("Ed Jais") playing a dominant role in plastic recovery and sorting. The country lacks large-scale recycling facilities, relying on small-scale operations and exporting plastic waste for processing (MoE 2023). This gap in domestic recycling capacity increases dependence on landfilling and incineration, limiting the country's ability to implement effective circular economy practices. Investment in modernized recycling plants, plastic processing technology, and waste-to-energy solutions is urgently needed to address this infrastructure gap.

4. Low Public Awareness and Stakeholder Engagement

The effectiveness of policies such as Extended Producer Responsibility (EPR), plastic bans, and waste segregation initiatives depends on public and business engagement. However, public awareness about waste separation, recycling incentives, and the impacts of plastic pollution remains low. Many businesses continue to use single-use plastics due to a lack of awareness or economic alternatives. Strengthening public education campaigns, private sector engagement, and behavioral change programs will be crucial for improving compliance with existing policies.

5. Financial and Investment Barriers

Scaling up sustainable plastic waste management in Cambodia requires significant financial resources, but funding limitations and insufficient private sector participation remain key obstacles. While there are policy incentives for waste management investment, private sector engagement remains limited, and financial mechanisms such as plastic credits, green financing, and circular economy funds are underdeveloped. To attract investment, Cambodia must develop financial incentives such as tax benefits for recycling businesses, subsidies for sustainable packaging alternatives, and public-private partnerships for infrastructure expansion.

Cambodia has made notable progress in developing a regulatory framework for plastic waste management, but key challenges including weak enforcement, inadequate infrastructure, low public engagement, and financial constraints, continue to hinder effective policy implementation. Addressing these gaps requires a multi-stakeholder approach, strengthening institutional coordination, enhancing enforcement mechanisms, investing in recycling infrastructure, and promoting financial incentives to encourage private sector participation. Strengthening these areas will accelerate Cambodia's transition toward a circular economy, reducing plastic pollution while fostering sustainable waste management solutions.

2.4 Plastic Recycling Technologies

Access to different types of recycling technology plays a crucial role in determining both the cost-effectiveness and sustainability of plastic waste management efforts (Fondazione 2015; Heng *et al.* 2008). Below are some of the existing plastic recycling technologies and associated challenges in Cambodia.

1. **Mechanical Recycling:** The most widely used method involves the collection, sorting, cleaning, and shredding of plastic into pellets for use in new products (Seng and Kaneko 2012). It generates income from selling recycled plastics but requires significant upfront investment in sorting facilities (Deltterra 2023). Challenges are high contamination rates and lack of efficient waste collection infrastructure (Heng *et al.* 2008).
2. **Chemical Recycling (Pyrolysis & Depolymerization):** Pyrolysis technology converts plastic waste into fuel, while depolymerization breaks down plastics into monomers, making them reusable in polymer production (Khmer Times 2021). It uses heat or solvents to break plastic waste into monomers for reuse (Deutsche Gesellschaft für Internationale Zusammenarbeit [GIZ] 2024). It has higher revenue potential due to quality outputs like fuel and raw polymers but requires high capital investment (Aczel, D. and Aczel, M. 2021). Limited infrastructure and lack of technological expertise in Cambodia acts as hindrance to chemical recycling (Kiripost 2022).
3. **Plastic-to-Road Construction:** It involves mixing processed plastic waste into asphalt to improve road durability and reduce waste accumulation. It is a cost-effective alternative to traditional road materials, potentially reducing road maintenance costs (Recycling Magazine 2016). It requires government approvals and standardization of materials to ensure durability.
4. **Eco-Bricks and Building Materials:** Cambodia repurposes plastic waste into bricks, tiles, and furniture by promoting sustainable construction (Bookbridge 2025). It provides low-cost construction alternatives and supports local employment (Asian News Network 2025). Market acceptance and durability testing of plastic-based materials remain a concern.
5. **Upcycling into Consumer Products:** Various initiatives are transforming plastic bottles into broom bristles, bags, and other household goods by creating alternative economic models for plastic waste reuse (Bookbridge 2025).
6. **Waste-to-Energy (WTE) Solutions:** A waste-to-energy project in Phnom Penh and Preah Sihanouk province is exploring ways to convert plastic waste into electricity for reducing landfill dependence (Khmer Times 2020). It converts non-recyclable plastic waste into electricity through incineration or gasification (Khmer Times 2023). Revenue generation can be from energy sales and tipping fees but requires long-term governmental support (UNDP 2021). Challenges are public opposition, environmental concerns, and regulatory constraints (Heng *et al.* 2008).

Cambodia has several opportunities to improve its plastic waste management through various technologies. However, each approach comes with distinct advantages, challenges, and levels of suitability based on the country's current infrastructure and economic conditions as summarized in **Table 2.3**.

Table 2-3 Comparative Analysis of Recycling Technologies in Cambodia

Technology	Opportunities	Challenges	Suitability for Cambodia
Mechanical Recycling	High scalability, low operational cost, widely used	Requires clean, sorted plastics, limited capacity for mixed plastics (Seng and Kaneko 2012)	Suitable Existing infrastructure supports this method
Chemical Recycling	Converts non-recyclable plastics, reduces reliance on virgin plastic	High energy cost, expensive setup, limited infrastructure in Cambodia (Khmer Times 2021)	Not Suitable Requires high investment and energy demands
Plastic-to-Road Construction	Enhances road durability, reuses large volumes of plastic waste	Regulatory approval needed, potential microplastic leakage (Recycling Magazine 2016)	Suitable Can be integrated into infrastructure projects with policy support
Eco-Bricks & Building Materials	Provides alternative construction materials, promotes circular economy	Production cost, market acceptance still developing (Asian News Network 2025)	Suitable Growing acceptance, good for local economies
Upcycling into Consumer Products	Creates new market opportunities, encourages small businesses	Quality control issues, limited consumer awareness (Bookbridge 2025)	Suitable Can be expanded with better consumer education
Waste-to-Energy (WTE) Solutions	Reduces landfill waste, generates electricity	High setup costs, concerns over emissions (Khmer Times 2020)	Not Suitable High capital and emissions concerns

Among the various plastic waste management technologies, mechanical recycling, plastic-to-road construction, eco-bricks, upcycling, and community-based plastic collection are the most suitable for Cambodia. These solutions align with the country's existing infrastructure, economic conditions, and regulatory landscape. Chemical recycling and waste-to-energy solutions, however, are not feasible due to high costs and infrastructure limitations. To enhance plastic waste management, Cambodia should focus on improving waste segregation, supporting recycling businesses, and integrating circular economy principles into waste management policies.

2.5 Plastic Recycling Market

Understanding these market trends is crucial for developing a sustainable and profitable recycling industry. The Cambodian plastic recycling industry is shaped by high plastic waste generation, a fragmented supply chain, and a lack of formal infrastructure, yet an evolving domestic and regional demand dynamics influenced by increasing environmental awareness, sustainability commitments, and regulatory changes. The plastic recycling market trends in Cambodia can be summarized as:

1. **Demand for Recycled Plastic:** is increasing due to corporate sustainability goals and the rise of eco-conscious consumers. Companies are looking for alternative materials to reduce reliance on virgin plastics.
2. **Government Policy Influence:** Cambodia is developing Extended Producer Responsibility (EPR) policies and national strategies to incentivize waste segregation, collection, and recycling (UNDP 2023).
3. **International Trade Impact:** Exporting plastic waste to Vietnam, Thailand, and China was historically a viable business model, but with China's National Sword Policy (2018) restricting waste imports, Cambodia's recyclers must find local solutions for plastic processing.

4. Emerging Business Models: Growth in social enterprises and circular economy initiatives, such as GOMI Recycle's furniture production from recycled plastics or BK PVC Pipe Company's integration of recycled materials into construction (B2B Cambodia 2021).

2.5.1 Domestic Market Demand

Consumer awareness of environmental sustainability is gradually growing in Cambodia, influencing a shift towards eco-friendly products, including those made from recycled plastics. However, the domestic market for recycled plastics is still in its early stages. Most consumers are not fully aware of the benefits of recycled plastics, indicating a need for educational and awareness campaigns to encourage adoption. Corporations, particularly in the retail and packaging sectors, are beginning to integrate recycled plastics into product designs and packaging. These initiatives are mainly led by international companies or local businesses connected to global supply chains, reflecting a growing interest in sustainable practices.

Sector-specific demand for recycled plastics is emerging in key industries, including packaging, construction, and manufacturing. In the packaging industry, recycled PET and HDPE are increasingly used for non-food packaging, including personal care products, detergents, and household items, driven by cost advantages and regulatory pressures in export markets. The construction sector shows potential for using recycled HDPE and PP products in piping, roofing, and eco-bricks as cost-effective and sustainable building materials. However, adoption in construction is limited by concerns over product quality, durability, and long-term performance. Despite these challenges, the growing market for green building materials presents significant growth opportunities for recycled plastics in Cambodia (World Bank 2023; Economic Research Institute for ASEAN and East Asia [ERIA] 2023).

The **Figure 2.7** illustrates the trends in the volume of recyclable plastic waste purchased by junkshops, as well as the number of junkshops operating in Cambodia from 2010 to 2021. The detailed recyclable waste purchased by junkshops can be seen in **Table 3.1**. Over the 11-year period, the volume of recyclable plastic waste purchased by junkshops has fluctuated, with notable decreases in 2012, 2014, and significant growth in 2021. Particularly notable is the sharp increase from 2020 to 2021, reaching nearly 35,000 tons, the highest recorded during this period. This spike could be related to post-pandemic economic recovery, increased plastic recycling initiatives, or improvements in collection practices. The number of junkshops generally shows an upward trend from 2010, peaking around 2016 and remaining relatively stable thereafter, except for a notable sharp decline in 2020. This decline likely reflects operational disruptions caused by COVID-19-related restrictions. However, by 2021, junkshop numbers recovered dramatically to surpass pre-pandemic levels, reaching nearly 700 junkshops, indicating robust growth in the informal recycling sector. The significant rise in both recyclable plastic waste volume and junkshop numbers in 2021 highlights a strong recovery and increased reliance on the informal recycling sector in Cambodia. It also suggests heightened economic incentives or improved awareness around plastic recycling during the post-pandemic period. The stability of junkshop numbers before 2020, alongside the relatively stable plastic waste volume, indicates an established informal recycling system vital to plastic waste management in Cambodia.

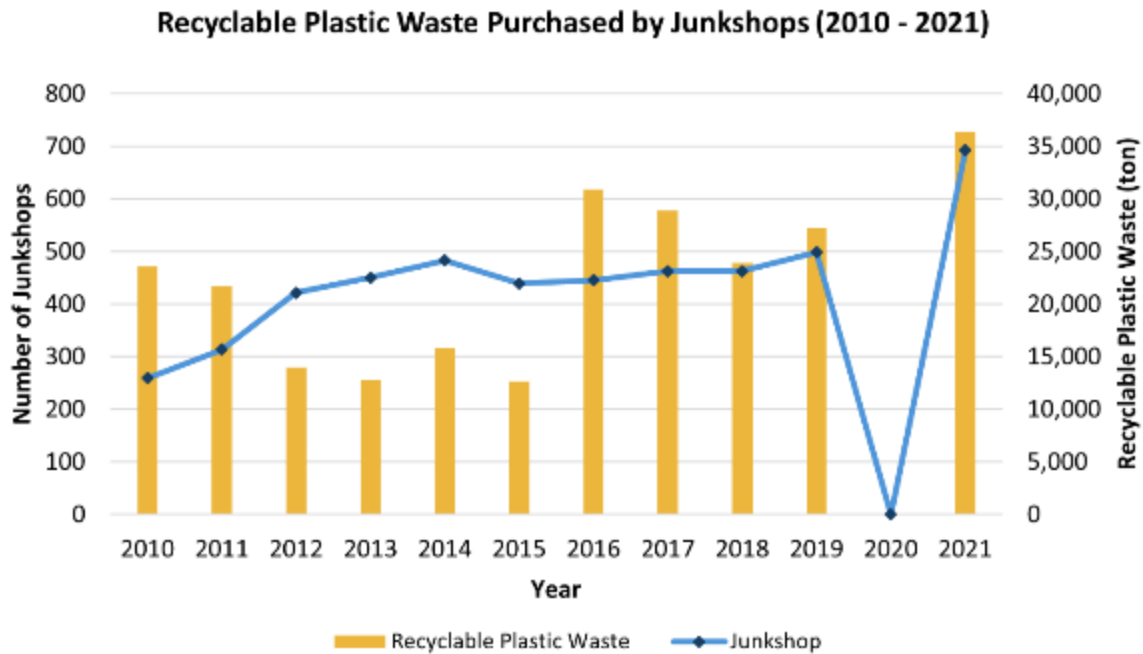


Figure 2-7 Recyclable Plastic Waste Purchase by Junkshops (2010–2021)
(Data Source: MoE (2021); Pheakdey et al. (2022))

2.5.2 Regional Market Demand

The regional demand for recycled plastics is strong, particularly in Southeast Asian countries such as Thailand, Vietnam, and Malaysia. These countries are implementing stricter environmental regulations and circular economy initiatives, driving demand for high-quality recycled plastics for packaging, automotive, and consumer goods manufacturing. The Association of Southeast Asian Nations (ASEAN) has prioritized plastic waste reduction, encouraging the use of recycled materials across industries. Cambodian recyclers have an opportunity to meet this demand by exporting recycled plastics that comply with international quality standards. However, competing with established recycling sectors in Thailand and Indonesia presents challenges. These countries have more advanced infrastructure, technology, and regulatory frameworks, giving them a competitive edge. Cambodian SMEs face difficulties in meeting the high-quality standards required by regional buyers due to limited access to advanced processing technologies and quality control mechanisms.

Despite the competitive challenges, export potential for Cambodian recycled plastics remains high, particularly if SMEs can achieve quality assurance and certification standards required by international markets. Establishing quality standards and certification systems for recycled plastics would enable Cambodian recyclers to access regional and international markets more effectively. Investments in quality assurance, certification programs, and compliance with international standards are essential for building trust with buyers and expanding export opportunities (Mordor Intelligence 2024; Grand View Research 2024; Fortune Business Insights 2024; Mobility Foresights 2024; S&P Global Commodity Insights 2024). However, barriers persist in plastic recycling market demand in Cambodia.

- Weak infrastructure for waste segregation at the household level, leading to high contamination rates in collected plastics.
- Limited access to capital to invest in improved processing and advanced recycling technologies.
- Competition from virgin plastics, which are often cheaper than recycled materials due to low production costs and government subsidies.

3. PLASTIC RECYCLING LANDSCAPE IN CAMBODIA

3.1 Plastic Recycling Value Chain Actors

Like any other ASEAN countries, the post-consumer plastic recycling value chain in Cambodia encompasses different actors including waste generators, collectors, aggregators, transporters, pre-processors/processors, and recyclers (Figure 3.1).



Figure 3-1 Post-Consumer Plastic Recycling Value Chain
(adapted from GA Circular 2019)

Waste generators are usually the individual consumers, households, institutions, and commercial establishments. Waste collectors are the people formally employed by the public (municipality/city council) or private sector (waste management companies) who collect waste and sift through recyclable plastics and sell for additional personal income other than their salary/wage for waste collection services. Other forms of formal waste collectors are waste banks / community establishments where people can deposit segregated recyclable materials in exchange for money or credit – like a bank account. Material Recovery Facilities (MRFs) are further formalized and large-scale operation for recyclable waste collection systems.

Others are the self-employed individual(s) who use bags, bi/motorcycles, small pushcarts or small motorized vehicles to collect (sometimes buy) recyclable materials from households, bulk waste generators or other establishments, or sometimes pick recyclables items from streets, garbage bins/dumpsters or even from landfill sites too. They sell the material to junk shops as a primary source of income. These waste pickers are often referred to as scavengers. These represent informal waste sector/informal waste workers. In Cambodia, they are called ‘*Ed Jais*.’

Junkshops are another integral part of the plastic recycling value chain, which can be operated informally or sometimes formally registered that buys recyclable materials from informal and formal sectors. Recyclables bought by junkshops are then sold to Aggregators, who then sell high quantities of recyclables to processors and/or recycling factories.

Processors are the ones who process the recyclable plastics into flakes. Processors either export this material or sell it to a local recycler. The recycler will then convert the flakes into usable applications such as food grade pellets, non-food grade pellets and polyester fibers or other

applications based on the input plastic types. The finished recycled plastic products are either consumed locally or exported.

Based on the legal entity, scale of business, operational and organizational structure, these actors can be categorized into large scale formal sectors, small and medium scale enterprises (SMEs), and informal sectors.

Consumers are an integral part of the plastic recycling value chain. As shown in **Figure 3.2** below, systemic change from habitual dependence on plastics, lack of waste segregation behaviors, weak consumer trust in recycled products etc. affects the plastic recycling value chain. However, strategic solutions such as behavior change campaigns, economic incentives, improved infrastructure, and social inclusion programs can significantly enhance the country's recycling efforts.

	BEHAVIORAL AND SOCIAL CHALLENGES	CORRESPONDING OPPORTUNITIES
	High Dependence and Habitual Usage Plastic usage deeply ingrained in daily life due to convenience.	Community Behavior Change Campaigns Educational programs, targeted messaging, promotion of reusable alternatives.
	Limited Economic Incentives for Recycling Low-value plastics ignored by informal recyclers due to poor economic returns.	Enhanced Economic Incentive Systems Plastic credits, buy-back schemes, monetary incentives for low-value plastic collection.
	Weak Recycling and Waste Segregation Behaviors Limited motivation to segregate and recycle plastics due to inconvenience.	Improved Collection and Segregation Infrastructure Convenient waste segregation points, decentralized community sorting centers, clear recycling bins.
	Low Consumer Acceptance of Recycled Products Perceptions that recycled plastic is inferior or unhygienic.	Social Marketing and Aspirational Branding Campaigns promoting quality, benefits, and eco-friendly branding of recycled plastic products.
	Dominance of Informal Waste Sector with Limited Scope Fragmented informal recycling practices focusing primarily on high-value plastics (bottles, cans).	Formalizing Informal Sector Participation Integrating waste pickers into formal cooperatives, ensuring stable income and improved working conditions.
	Limited Understanding of Health Risks Associated with Plastics Consumers unaware of chemical risks and health implications of plastic usage and disposal methods (e.g., burning).	Public Health Awareness Initiatives Targeted health awareness campaigns emphasizing risks associated with plastic chemicals, burning waste, and improper disposal.
	Social Norms and Gender Dynamics Women manage household purchases but often unaware or not incentivized to reduce plastic waste.	Women-Focused Educational Initiatives Leveraging influential role of women as key decision-makers in households and small businesses.
	Weak Enforcement and Governance Limited policy implementation and enforcement regarding plastic waste management.	Enhanced Regulatory Frameworks and Local Engagement Strengthening local governance, partnerships with local authorities, community involvement in monitoring compliance.
	Infrastructure Gaps in Low-income and Rural Areas Limited access to formal waste management services, leading to improper disposal behaviors (e.g., burning, littering).	Localized Solutions for Underserved Areas Community-based decentralized waste collection, education on safe disposal alternatives.

Figure 3-2 Behavioral and Social Challenges and Opportunities in Plastic Recycling in Cambodia

Waste collectors

Cambodia's recycling market is a mix of formal and informal sector actors, including SMEs, large-scale recyclers, informal waste pickers, and international development organizations. Formal private company like CINTRI (Cambodia) Ltd is contracted to provide waste management services only in big cities like Phnom Penh.

Collection of recyclable plastics is largely grassroots and informal, with a heavy reliance on waste pickers, known as "Ed Jais," who collect high-value recyclables such as PET bottles and HDPE containers. These informal waste collectors sell the recyclables to

intermediaries, who then export them to neighboring countries, including Vietnam, Thailand, and China. According to the International Alliance of Waste Pickers³, an estimated 3000 workers operate in dumps and landfills; nearly 50 per cent of the workers are children and they collect aluminum, glass and plastics. Phnom Penh also has 2000 registered waste pickers working on the Phnom Penh Municipality landfill. These waste pickers pay the manager of the landfill to access the waste. For an entire day's work, an average adult waste picker earns 4000 to 5000 riels and children earn half that amount. These Ed jais through waste across Cambodia, contribute to the collection and recycling of nearly 8% of total municipal solid waste, estimated at over 300,000 tons per year⁴.

There have been increasing presence of junk shops and aggregators in Cambodia. **Table 3.1** shows there has been nearly 2.5 times increase in junk shops and 1.5 times increase in collection of recyclable plastics between 2010 and 2021.

Table 3-1 Recyclable waste purchased by junkshops from 2010 to 2021.

Year	Junkshop ^a (number)	Recyclable Waste (ton) ^a						Revenue Recovered (USD) ^b
		Paper and Cardboard	Plastic	Aluminum	Iron	Glass	Total	
2010	259	26,522	23,583	8449	63,077	1367	122,997	25,578,460
2011	313	25,340	21,689	7297	68,336	14,469	137,130	25,415,510
2012	421	14,856	13,960	9866	30,013	9083	77,777	19,556,430
2013	450	18,004	12,820	10,113	19,955	13,652	74,544	18,559,020
2014	483	22,838	15,842	15,942	29,930	14,311	98,863	27,426,040
2015	439	14,769	12,678	100,050	17,184	9028	153,709	114,686,375
2016	445	33,857	30,907	87,741	74,328	20,134	246,967	115,820,995
2017	462	63,719	28,871	89,430	105,770	16,256	304,046	124,993,065
2018	462	36,829	23,886	26,664	45,723	7269	140,371	43,796,765
2019	498	38,180	27,208	27,973	46,282	7532	147,175	45,972,940
2020	NA	NA	NA	NA	NA	NA	NA	NA
2021	692	67,701	36,389	31,120	64,348	2170	201,728	56,267,615

^aMinistry of Environment (MoE) (2021)

^b(Pheakdey et al. 2022)

The informal sector dominates plastic waste collection, with waste pickers and junk shops forming the backbone of the supply chain. These informal actors sort and sell plastics to small-scale recyclers or export them to neighboring countries such as Vietnam and Thailand, where recycling capacity is higher (Simala and Raksmei 2022). The role of NGOs and international donors, such as the United Nations Development Programme (UNDP) and GIZ, is also significant, as they facilitate investment, technical support, and policy recommendations to strengthen the recycling market (UNDP 2019; GIZ 2024).

3.2 Scale of Operation of Cambodia's Plastic Recycling Industry

Cambodia's growing plastic recycling industry plays a crucial role in fostering a circular economy, where materials are continuously reused, reducing environmental impact and reliance on virgin resources. The processors and recycling businesses operate either as large scale formal private sector recycling enterprises or as small and medium-sized recyclers, or as upcycling and product diversification operations.

i) Large-Scale Plastic Recycling Enterprises

Companies like Lim Vanny Plastic Recycling Enterprise and BK PVC Pipe Company, and recently established A1 Plastics Resources are some of the large-scale plastic recycling enterprises in Cambodia. Their operations handle high volumes of waste, transforming polyethylene (PE),

³ International Alliance of Waste Pickers (n.d.) Waste Pickers in Cambodia. <https://globalrec.org/law-report/cambodia/>.

⁴ United Nations Development Programme (2020). Living on the Margins: A Community Battles COVID-19 Impact, 23 November. <https://www.undp.org/cambodia/news/living-margins-community-battles-covid-19-impact>.

polypropylene (PP), polystyrene (PS), and polyvinyl chloride (PVC), and Polyethylene terephthalate (PET) into valuable secondary raw materials. These enterprises significantly contribute to reducing landfill waste while supplying recycled plastics to domestic industries, ensuring resources remain in circulation.

ii) Small and Medium-Sized Recyclers

Smaller enterprises, such as Chenda Khmer Recycle Co., Ltd. and Jiangxi Jianhong Plastic Recycling Co., Ltd., play an essential role in the localized circular economy, focusing on specific plastic types like PET and PVC. Despite their smaller-scale operations, they contribute to resource recovery by transforming waste materials into industrial inputs, helping Cambodia reduce its dependence on imported plastic resins.

iii) Upcycling and Product Diversification: Companies like GOMI Recycle Company stand out for their value-added recycling approach, turning waste plastics into recycled furniture and other consumer products. This model not only diverts waste from landfills but also extends the lifecycle of plastic materials, making recycling more economically viable. By creating marketable recycled products, enterprises strengthen consumer participation in the circular economy, encouraging sustainable consumption.

iv) Social enterprises /NGOs like TONTOTON and COMPED are another category of stakeholders in plastic waste collection and aggregation.

3.3 SMEs in Cambodia's Plastic Recycling Industry

SMEs are a crucial part of the Cambodian economy, contributing to both economic and social development. More than 90 percent of businesses in Cambodia are known as small and medium enterprises. In the industrial sector, 97.3% of enterprises are in the form microenterprises, followed by 2.2% for SMEs, and 0.6% for large enterprises. Among these enterprises, 91.7% of them are in manufacturing⁵.

From the scale of operation, all the recycling enterprises operating in Cambodia are classified as SMEs. SME in Cambodia is defined by two criteria: the number of employees and the turnover or assets as shown in **Table 3.2** based on Ministry of Industry, Science, Technology & Innovation (MISTI) Prakas No. 25 MISTI/2023 on SMEs Classification. This classification is commonly used for regulatory, taxation, and policy support purposes.

Table 3-2 SME Classification in Cambodia

Category	Employees	Annual turnover (KHR)	Assets (KHR)
Micro	1 - 10	≤ 250 million	≤ 250 million
Small	11 - 50	250 million – 2 billion	250 million – 2 billion
Medium	51 - 100	2 billion – 10 billion	2 billion – 10 billion

There is an overlap in the Informal sector and SMEs as large number of SMEs are not registered Officially.

The study team conducted primary data collection, field visit and survey of Cambodia's key recycling enterprises revealing differences in scale, processing methods, and market strategies. This is usually true for micro enterprises, as micro enterprises are mostly family-owned businesses and operate informally, making it difficult for the government to collect taxes and design and implement support policies to help them move up the value chain (**Table 3.3**).

⁵ Royal Government of Cambodia (2015). *Cambodia Industrial Development Policy 2015 – 2025: Market Orientation and Enabling Environment for Industrial Development*. https://data.opendatacommons.org/dataset/6609b084-bbc1-471a-ad01-ef0ecc4a6a62/resource/61cca7d7-10a7-4d68-bf32-7228df02b7f3/download/industrial-development-policy-2015-2025_eng.pdf.

Table 3-3 Comparative Analysis of Key SMEs in the Cambodian Recycling Market

Enterprise	Province	Plastic Types	Processing Capacity	Market Focus	Key Challenges
BC Recycling Enterprise	Battambang	Granule and HDPE	1-2 tons/day	Domestic (garbage bags)	Pollution complaints from surrounding communities
Yan Chamab PET Recycling Enterprise	Battambang	PET	4-5 tons/day	Domestic	Heavy reliance on manual sorting
Lim Vanny Recycling Enterprise 1	Phnom Penh	PE, PP, PS	20 tons/day	Domestic	High operational costs
Lim Vanny Recycling Enterprise 2	Phnom Penh	PS	10 tons/day	Domestic	Smaller Scale and Lower Output
Mao Srey Pov Recycling Enterprise	Phnom Penh	PE, PP, PS	2 tons/day	Domestic	Transport & sorting inefficiencies
Jiangxi Jianhong Plastic Recycling Co., Ltd.	Phnom Penh	PE, PVC	0.25 tons/day	Domestic	Limited Production Capacity
BK PVC Pipe Company	Kandal	PVC	4 tons/day	Domestic (pipes)	Fluctuating raw material supply
GOMI Recycle Company	Phnom Penh	PET, PE, PP, PS	2.5 tons/month	Recycled furniture	Workforce constraints
GOMI Recycle Company	Svay Rieng	PET, PE, PP, PS	2.5 tons/month	Recycled furniture	Workforce constraints
Chenda Khmer Recycle Co., Ltd	Phnom Penh	PET	0.5 tons/day	Domestic	Limited Workforce and Production Capacity

A series of case studies highlight the contributions of local recycling enterprises, their challenges, and their alignment with circular economy principles. **Text Box 3.1** describes the detailed information of the case studies on the plastic recycling in Cambodia.

Text Box 3-1 Case Studies on Plastic Recycling in Cambodia

1) BC Recycling Enterprise in Battambang Province

Established in 2017, BC Recycling Enterprise is situated along the bypass road of Wat Kor Sangkat in Battambang City. However, operations were suspended for nearly two years following complaints from neighboring residents regarding the odor of wastewater. After addressing these concerns, the facility resumed operations in March 2019 and has been functioning continuously ever since. The enterprise specializes in recycling high-density polyethylene (HDPE) plastic bags, particularly flexible bags with handles in black, white, green, red, and yellow. On average, 1–2 tons of plastic bags are collected and processed daily. This process yields approximately 600 to 1,200 kg of clean plastic, which is then converted into an equivalent amount of plastic pellets. These pellets serve as raw materials for manufacturing reusable bags, primarily garbage bags and other non-food storage products as shown in **Figure 3.3**.



Figure 3-3 Plastic Waste Collection, Processing, and Recycling at BC Recycling Enterprise, Battambang

2) Yan Chamab PET Recycling Enterprise in Battambang Province

Founded in 2017, Yan Chanmab PET Recycling Enterprise is a key player in Cambodia's plastic recycling industry, located in Battambang Province. The enterprise sources post-consumer PET bottles from neighboring provinces such as Pursat, Battambang, and Banteay Meanchey, ensuring a consistent supply of raw materials for its operations. With a daily processing capacity of 4–5 tons, the facility is equipped with semi-mechanical sorting, cleaning, and shredding systems, efficiently converting PET waste into high-quality PET flakes. These flakes serve as the primary raw material for manufacturing new plastic bottles, contributing to a closed-loop recycling system that reduces reliance on virgin plastic. To support its large-scale operations, Yan Chanmab employs approximately 70 workers, who oversee various stages of the recycling process, including sorting, cleaning, shredding, and molding. The facility is well-equipped with two pre-form PET-making machines and 11 bottle-making machines, enabling efficient production of recycled plastic bottles that meet industry standards as depicted in **Figure 3.4**.



Figure 3-4 Plastic Waste Collection, Processing, and Recycling at Yan Chamab PET Recycling Enterprise, Battambang

3) Lim Vanny Plastic Recycling Enterprise 1 in Phnom Penh Province

Established in 2000, Lim Vanny Plastic Recycling Enterprise is a leading plastic recycling facility in Cambodia, spanning an impressive 10-hectare site in Prek Kampus Village, Dangkor District,

Phnom Penh. Over the years, it has expanded its operations significantly and now employs 50 staff members, including 30 women, reinforcing its commitment to local job creation and economic development. With a daily processing capacity of 20 tons, the enterprise operates through five subsidiaries, each specializing in different capacities, raw materials, and plastic products. The facility focuses on recycling polyethylene (PE), polypropylene (PP), and polystyrene (PS), producing an estimated 10 tons of plastic pellets per day. These high-quality pellets serve as raw materials for various manufacturing industries, supporting Cambodia's growing circular economy.

Lim Vanny sources its raw materials locally from factories, brokers, markets, and landfills across Phnom Penh, Siem Reap, and Kampong Cham, ensuring a steady supply for its recycling operations as shown in **Figure 3.5**. The facility is equipped with four specialized machines, two dedicated to PE, one for PS, and another for PP- allowing for efficient material processing. The purchasing prices for raw materials are structured as PE#1: 1,500 Riel/kg, PE#2: 500 Riel/kg, PP: 200 Riel/kg, and PS: 1,200 Riel/kg. In terms of energy and water consumption, the facility operates with an electricity demand of approximately 2,000 kWh per day and utilizes 72 m³ of water daily, highlighting the resource-intensive nature of plastic recycling. The final recycled products, primarily plastic pellets, are sold domestically, with Camsing Electric being a key buyer. The market prices for these recycled pellets are as PE#1: 750 USD/ton, PE#2: 520 USD/ton, PP: 480 USD/ton, and PS: 1,500 USD/ton.



Figure 3-5 Plastic Waste Collection, Processing, and Recycling at Lim Vanny Plastic Recycling Enterprise 1, Phnom Penh

4) Lim Vanny Plastic Recycling Enterprise 2 in Phnom Penh Province

Operating as a subsidiary of Lim Vanny Prek Kampus, Lim Vanny Plastic Recycling Enterprise 2 is located at #669 Tnaot Chrum Village, Boeung Tumpun Sangkat, Meanchey District, Phnom Penh as shown in **Figure 3.6**. Despite being a smaller-scale facility, it plays a vital role in Cambodia's polystyrene (PS) recycling efforts. The enterprise employs 11 staff members, including 6 women, contributing to both environmental sustainability and local job creation. Equipped with two specialized machines designed specifically for PS recycling, the facility processes raw materials sourced from factories, brokers, markets, and landfills. It has a production capacity of 10 tons per day, though its current daily output stands at approximately 1.5 tons of PS pellets. These pellets are distributed domestically, with pricing aligned to the market rates set by the parent company. One of the key advantages of this facility is its low resource consumption. The production process for PS requires minimal water usage, as extensive cleaning is not necessary. However, the facility consumes around 450 kWh of electricity per day by reflecting the energy demands of shredding, melting, and pelletizing PS waste.



Figure 3-6 Plastic Waste Collection, Processing, and Recycling at Lim Vanny Plastic Recycling Enterprise 2, Phnom Penh

5) Mao Srey Pov Plastic Recycling Enterprise in Phnom Penh Province

Mao Srey Pov Plastic Recycling stands as a significant player in Cambodia's plastic recycling industry, offering valuable insights into its operations based in Phea Village, Sangkat Prateah Lang, Kambol District with a dedicated workforce of 36 employees, the enterprise specializes in recycling polyethylene (PE), polypropylene (PP), and polystyrene (PS), sourcing raw materials from factories, brokers, markets, and landfills. The facility boasts a robust production capacity of 300 tons per month, with a daily output of approximately 2 tons of plastic pellets. To facilitate seamless material flow, trucks and carts are employed for transportation, ensuring an efficient supply chain. The recycling process incorporates hand separation, shredding, washing, grinding, and melting, transforming plastic waste into high-quality granules suitable for reuse in various industries. Operating with an electricity consumption of around 66 kWh per day, the facility demonstrates energy efficiency, particularly in minimizing water usage, as the recycling of its selected plastics requires limited cleaning as depicted in **Figure 3.7**. This strategic approach not only reduces operational costs but also enhances environmental sustainability. Mao Srey Pov Plastic Recycling contributes to the local circular economy, supplying its recycled plastic pellets to domestic markets at competitive prices as PE: 750 USD per ton, PP: 480 USD per ton, and PS: 1,500 USD per ton.



Figure 3-7 Plastic Waste Collection, Processing, and Recycling at Mao Srey Pov Plastic Recycling Enterprise, Phnom Penh

6) Jiangxi Jianhong Plastic Recycling Co., Ltd. in Phnom Penh Province

Founded in 2020 by Mr. Zhou Jianhong, Jiangxi Jianhong Plastic Recycling Co., Ltd. has established itself as a key player in Phnom Penh's plastic recycling sector. The facility operates with a dedicated workforce of 25 employees, including 17 men and 8 women, and specializes in the recycling of polyethylene (PE) and polyvinyl chloride (PVC). Sourcing raw materials from factories and landfills, the company ensures a steady supply of recyclable plastics. Transportation logistics are managed through a combination of trucks and carts, facilitating the efficient movement of materials throughout the recycling process. The facility employs a range of processing techniques, including hand separation, shredding, washing, grinding, and melting, transforming plastic waste into high-quality granules suitable for reuse in various applications as shown in **Figure 3.8**. Despite its relatively modest production capacity of 0.25 tons per day, Jiangxi Jianhong Plastic Recycling is committed to sustainable waste management and contributes to Phnom Penh's circular economy. The facility operates with an electricity consumption of approximately 360 kWh per day, reflecting its focus on efficiency and responsible resource utilization.



Figure 3-8 Plastic Waste Collection, Processing, and Recycling at Jiangxi Jianhong Plastic Recycling Co., Ltd., Phnom Penh

7) BK PVC Pipe Company in Kandal Province

Established in 2000 by Mr. Pok BunKhim, BK PVC Pipe Company has been a cornerstone of Cambodia's PVC recycling and pipe manufacturing industry. Located in Kandal, the company has built a strong reputation for its commitment to sustainability and efficient resource utilization as shown in **Figure 3.9**. Employing a dedicated workforce of 30 staff members, including 20 men and 10 women, the company plays a vital role in local job creation and industrial recycling efforts. BK PVC Pipe Company specializes in the recycling of polyvinyl chloride (PVC), sourcing raw materials from both factories and brokers in Phnom Penh. With a daily production capacity of approximately 4 tons, the facility transforms recycled PVC into high-quality pipes through a comprehensive processing system that includes hand separation, shredding, washing, grinding, melting, and molding. To ensure efficient operations, the company manages a fleet of trucks for the seamless transportation of materials and finished products. The facility operates with an electricity consumption of approximately 126 kWh per day, reflecting a balance between production efficiency and sustainability. Products are competitively priced at 800 USD per ton, making them a cost-effective solution for the construction and infrastructure sectors.

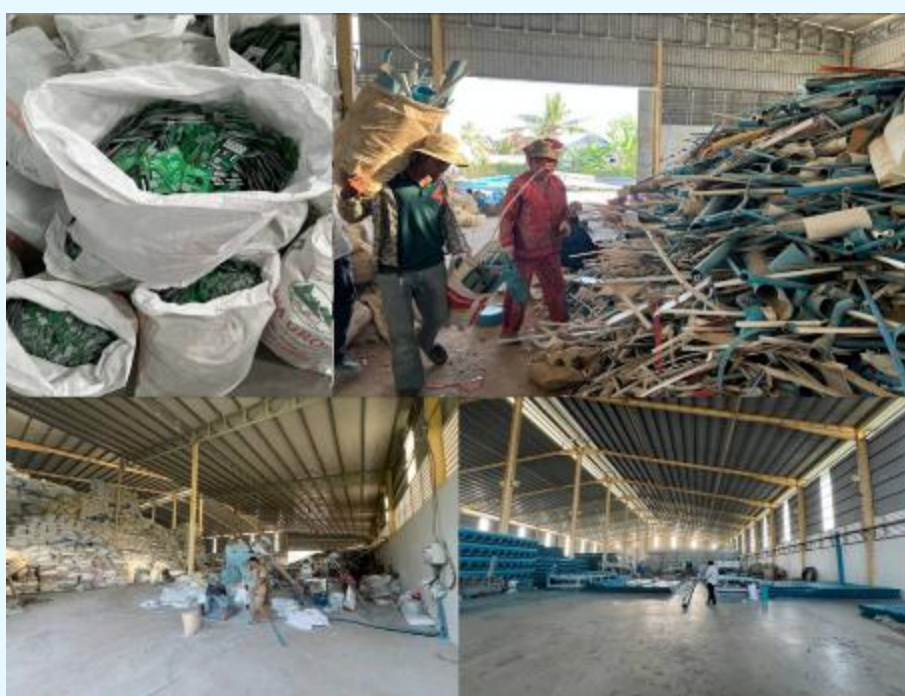


Figure 3-9 Plastic Waste Collection, Processing, and Recycling at BK PVC Pipe Company, Kandal

8) GOMI Recycle Company in Phnom Penh Province

Founded in 2018, GOMI Recycle Company has established itself as a key player in Cambodia's recycling industry, contributing to sustainable waste management and resource recovery. Based in Phnom Penh, the company has expanded its operations, now employing 40 staff members, including 8 women, reinforcing its commitment to local job creation and environmental responsibility. Specializing in the recycling of multiple plastic materials, GOMI processes polyethylene terephthalate (PET), polyethylene (PE), polypropylene (PP), and polystyrene (PS). The company sources raw materials from markets, industries, schools, and its GOMI 110 initiative, ensuring a steady supply of recyclable plastics. To support its operations, GOMI manages a fleet of 12 trucks, facilitating efficient transportation of materials and finished products. The facility utilizes various processing techniques, including hand separation, shredding, melting, and molding, to transform waste plastics into high-quality recycled furniture as shown in **Figure 3.10**. With a monthly production capacity of approximately 2.5 tons, GOMI's products are competitively priced at 1,300 USD per ton, catering to both Phnom Penh and Svay Rieng markets. Demonstrating a strong commitment to sustainability, the company operates with an electricity consumption of just 90 kWh per day, reflecting its focus on energy efficiency and environmentally responsible practices.



Figure 3-10 Plastic Waste Collection, Processing, and Recycling at GOMI Recycle Company, Phnom Penh

9) GOMI Recycle Company in Svay Rieng Province

Established in 2015, GOMI Recycle Company has been a key player in plastic waste recycling in Svay Rieng, contributing to sustainable waste management and resource recovery. Sourcing raw materials from markets, industries, and schools, GOMI ensures a steady supply of recyclable plastics, reinforcing its commitment to a circular economy. Despite operating with a lean workforce of just five staff members, the company maintains an efficient recycling process, utilizing a fleet of three trucks for material collection and product distribution. The facility employs a comprehensive recycling approach, incorporating hand separation, shredding, melting, and molding to transform plastic waste into reusable materials as shown in **Figure 3.11**.



Figure 3-11 Plastic Waste Collection, Processing, and Recycling at GOMI Recycle Company, Svay Rieng

10) Chenda Khmer Recycle Co., Ltd. in Phnom Penh Province

Chenda Khmer Recycle Co. Ltd. is a dedicated PET recycling enterprise committed to sustainable waste management and resource recovery in Phnom Penh. Operating with a workforce of 10 employees, including 6 women, the company plays a vital role in Cambodia's plastic recycling industry, contributing to the reduction of plastic waste and promoting a circular economy. The facility sources its polyethylene terephthalate (PET) waste primarily from junkshops, ensuring a consistent supply of recyclable materials. Transportation is managed through a combination of trucks and carts, facilitating the efficient movement of raw materials and finished products. The

recycling process involves hand separation and shredding, transforming discarded PET bottles into high-quality PET flakes for industrial use. With a daily production capacity of approximately 0.5 tons of PET flakes, the company supplies its products to local buyers at a competitive rate of 750 USD per ton. Despite its relatively small-scale operations, Chenda Khmer Recycle Co. Ltd. maintains an energy-efficient approach, consuming only 33 kWh of electricity per day, as shown in **Figure 3.12**.

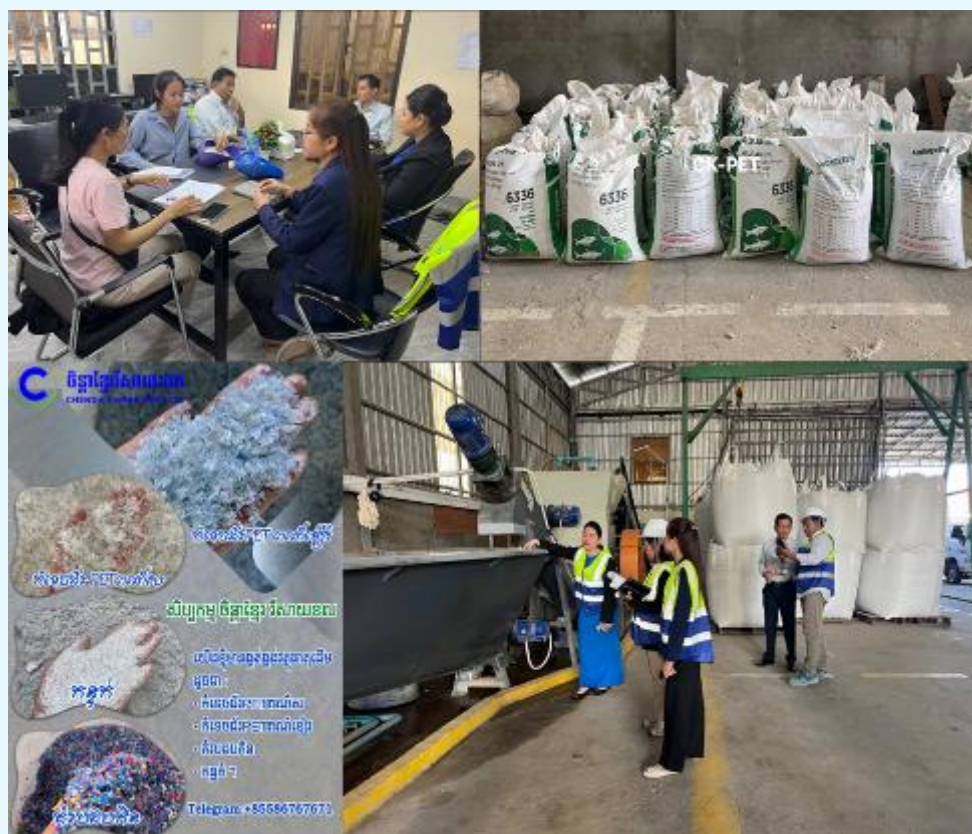


Figure 3-12 Plastic Waste Collection, Processing, and Recycling at Chenda Khmer Recycle Co. Ltd., Phnom Penh

11) Man Wah Camstar Plastic Co, Ltd. in Svay Rieng Province

Man Wah Camstar Plastic Co., Ltd. is a company which was established in 2006 in Svay Rieng. The company has grown to employ 150 staff members, including 100 men and 50 women, and specializes in recycling materials such as polyethylene terephthalate (PET), high-density polyethylene (HDPE), and polypropylene (PP). Sourcing materials from various provinces, the facility utilizes trucks and carts for transportation. Man Wah Camstar employs processing techniques including shredding, washing, and fabric processing to produce polyester, with a daily production capacity of approximately 40 tons. The company operates efficiently, consuming around 90 kWh of electricity daily and demonstrating a strong commitment to sustainable practices. With products sold at competitive prices, the enterprise also engages in trade with Vietnam and China, contributing significantly to the local recycling industry in Svay Rieng as shown in **Figure 3.13**.



Figure 3-13 Plastic Waste Collection, Processing, and Recycling at Man Wah Camstar Plastic Co., Ltd.

12) Thorn Vandy Plastic Recycling

Thorn Van Dy Plastic Recycling, established in 2024, is a burgeoning company that currently employs 7 staff members, including 3 women and 4 men. The company focuses on recycling polyethylene terephthalate (PET), high-density polyethylene (HDPE), and polypropylene (PP), sourcing its materials primarily from junkshops across various provinces. Utilizing trucks and carts for transportation, the facility employs techniques such as separate labeling and shredding to process materials into flakes. With a daily production capacity of approximately 1.3 tons, Thorn Van Dy produces high-quality flakes sold at around 6,100.2 USD per ton. The company demonstrates a commitment to sustainable practices, although it does not utilize any water wells in its operations. Thorn Van Dy also engages in trade with Vietnam, contributing to the local recycling efforts and economy as shown in **Figure 3.14**.



Figure 3-14 Plastic Waste Collection, Processing, and Recycling at Thorn Van Dy Plastic Recycling Co., Ltd.

13) Youn Sina Plastic Bag Waste Buyer Enterprise

Youn Sina plastic waste buyer enterprise established in 2014, operates a small recycling business employing 10 staff members, consisting of 6 men and 4 women. The company specializes in collecting and recycling high-density polyethylene (HDPE) and polypropylene (PP) sourced from waste collectors and landfills in Battambang. Utilizing trucks and carts for transportation, Youn Sina employs various processing techniques, including crushing, washing, drying, pressing, and shredding, to produce HDPE and PP flakes. The facility has a daily production capacity of approximately 1.4 tons, with products sold at competitive prices. The business maintains a commitment to sustainability despite daily operational costs, such as 25 USD for diesel fuel. Additionally, it uses well water to support its processes, contributing to the local recycling efforts in the region as shown in **Figure 3.15**.



Figure 3-15 Plastic Waste Collection, Processing, and Recycling at Youn Sina Plastic Waste Buyer Enterprise

14) Leang Muy Soing Drinking Water Bottle Manufacturer

Leang Muy Soing drinking water bottle Manufacturer, established in 2014 located in Kampong Cham province. The company employs 4 staff members, including 1 man and 3 women, and specializes in recycling PET tubes. Sourcing materials primarily from Phnom Penh, the facility operates a truck for transportation and utilizes a bottle blowing machine and a drinking water purifier in its processes. With a daily production capacity of approximately 0.3 tons, the company produces high-quality PET, sold at competitive prices. Laeng Mouy Sang demonstrates a commitment to sustainability, consuming about 110 kWh of electricity daily. The business also relies on well water to support its operations, contributing to local recycling efforts and the economy in Kampong Cham as shown in **Figure 3.16**.



Figure 3-16 Plastic Waste Collection, Processing, and Recycling at Leang Muy Soing Drinking Water Bottle Manufacturer

15) Sen Ry Drinking water bottle Enterprise

Sen Ry Drinking Water Bottle Enterprise, established in 2020 in Siem Reap. The company employs 20 staff members, comprising 10 men and 10 women, and specializes in recycling PET materials sourced from markets and businesses in Siem Reap and Banteay Meanchey. Utilizing trucks for transportation, the facility employs various processing techniques, including label removal, shredding, melting, and bottle blowing, to produce high-quality PET products. With a daily production capacity of approximately 1 ton, the enterprise operates efficiently, consuming about 130 kWh of electricity daily. Pure Water Bottles demonstrates a commitment to sustainability while contributing to local recycling efforts and the economy in the region as shown in **Figure 3.17**.



Figure 3-17 Plastic Waste Collection, Processing, and Recycling at Sen Ry Drinking water bottle Enterprise

16) SMLY Plastic Recycling Enterprise

SMLY Plastic Recycling is an enterprise which was established by Mr. Chhon Samith in 2024 in Siem Reap. The company employs 94 staff members, including 40 men and 54 women, and specializes in recycling PET and HDPE materials sourced from brokers and landfills across Siem Reap and Banteay Meanchey. Utilizing trucks for transportation, the facility employs various processing techniques, including label removal, shredding, melting, and bottle blowing, to produce high-quality PET pellets. With a daily production capacity of approximately 25 tons, SMLY operates efficiently, consuming about 130 kWh of electricity daily. The enterprise is committed to sustainability and plays a significant role in enhancing local recycling efforts, contributing positively to the regional economy as shown in **Figure 3.18**.



Figure 3-18 Plastic Waste Collection, Processing, and Recycling at SMLY Plastic Recycling Enterprise

17) A1 Plastics Resources Company Limited

Established in 2023 in Phnom Penh, Cambodia, with production slated to begin in Q3 2026, A1 Plastics Resources specializes in recycling plastic PET bottles by turning them into PET flakes and food-grade pellets which can be used to create a variety of products such as textiles, food containers and beverage bottle. A1 resources purchase the collected plastic bottles from the Edjai and middlemen to be recycled through the process of sorting, washing and decontamination, flaking and pelletizing as shown in **Figure 3.19**.



Figure 3-19 Plastic Waste Collection, Processing, and Recycling at A1 Plastics Resources Company Limited
(Source: A1 Plastics Resources Company Limited (2023))

3.4 SMEs and their Business Models for Plastic Waste Collection, Processing, and Sales

The flowchart (**Figure 3.20**) illustrates the key stages in the plastic recycling value chain, emphasizing the role of SMEs in processing and reintroducing recycled plastics into the economy. SMEs contribute significantly at various stages, including waste collection (via direct and informal sectors), sorting, processing (cleaning and shredding), recycling (pelletizing and manufacturing), and product development. These businesses supply recycled materials to both domestic and export markets, creating economic opportunities and supporting Cambodia's transition toward a circular economy. However, challenges such as limited infrastructure, lack of financial support, and competition with virgin plastics highlight the need for policy interventions and investment in the sector.



Figure 3-20 Presence of SMEs in Plastic Recycling Value Chain in Cambodia

Collection and Sorting

SMEs are instrumental in the initial collection of plastic waste, especially in urban areas where plastic consumption is high. These enterprises often operate small-scale businesses or cooperatives, collaborating with informal waste pickers who play an essential role in the collection process. SMEs mainly focus on high-value plastics such as PET (polyethylene terephthalate) and HDPE (high-density polyethylene), which have established markets and reasonable resale value. Collection efforts are typically localized, with SMEs sourcing materials from households, businesses, and public spaces. In some cases, SMEs collaborate with local authorities or municipal waste collection services to ensure a consistent waste stream.

After collecting, SMEs sort plastic waste into different categories based on material type and recyclability. This is a critical step in the recycling chain, as it determines the quality and end-use of the recyclable material. Many SMEs operate small sorting facilities or use community spaces for manual sorting, separating plastics into streams such as PET, HDPE, LDPE (low-density polyethylene), and PP (polypropylene). Although manual sorting provides employment opportunities, it is labor-intensive and often leads to inefficiencies and quality issues due to contamination. Limited access to advanced sorting technologies further constrains efficiency and scalability. To address these challenges, some SMEs invest in basic training programs to improve sorting practices, reduce contamination, and enhance the quality of recycled materials.

Recycling and Processing

Direct involvement of SMEs in the full recycling process is limited, primarily due to the high costs and technological demands of advanced recycling techniques, such as chemical recycling. Most SMEs lack the capital required for expensive machinery and focus on basic processing activities, including washing and shredding plastic waste, to prepare it for sale to larger recycling facilities or export markets. This initial processing adds value to the collected waste, allowing SMEs to participate in the recycling market despite limited resources. A few SMEs engage in small-scale production, converting shredded or pelletized plastics into simple products like bags, containers, or construction materials. However, these operations are usually niche and cater to local markets, constrained by limited consumer demand and a lack of quality standards for recycled products.

Plastic recycling SMEs in Cambodia operate under various business models, depending on their position in the recycling value chain as shown in **Figure 3.21**.

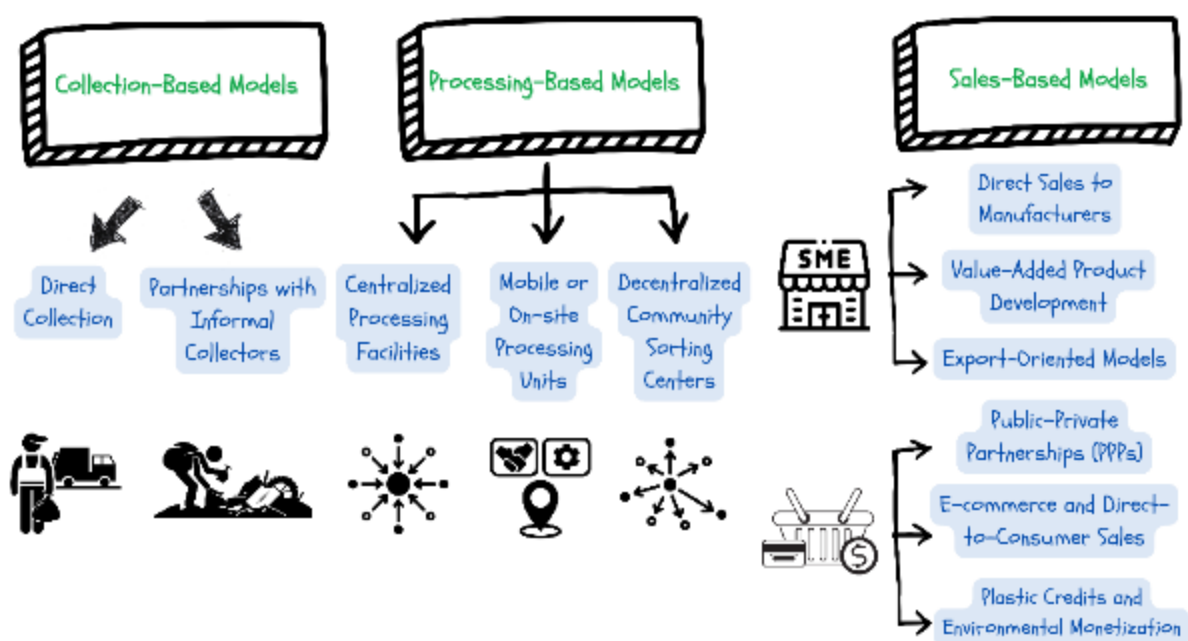


Figure 3-21 Business Models for Plastic Waste Collection, Processing, and Sales in Cambodia

Diverse business models are employed by SMEs in Cambodia's plastic recycling sector; categorized into Collection-Based, Processing-Based, and Sales-Based Models.

- **Collection-Based Models** involve direct waste collection from households, businesses, and industries, requiring higher logistics investments but ensuring better quality control. Many businesses also partner with informal waste collectors, leveraging their networks for pre-sorted plastics while fostering social inclusion and fair compensation.
- **Processing-Based Models** vary from centralized processing facilities benefiting from economies of scale to mobile or on-site processing units that provide plastic waste solutions in remote areas. Additionally, decentralized community sorting centers are gaining traction, engaging local stakeholders and creating employment opportunities in waste recovery.
- **Sales-Based Models** enable SMEs to generate revenue through direct sales to manufacturers, value-added product development, and export-oriented models. Many SMEs participate in public-private partnerships (PPPs) to secure financial stability, while innovative models such as plastic credits and environmental monetization offer new revenue streams. Additionally, e-commerce and direct-to-consumer sales provide recyclers with broader market access, particularly for sustainable and eco-friendly products.

(ASEAN Secretariat 2022; Basak and Khatun 2021; Cohen and Nussbaum 2023; Geng and Doberstein 2021; IFC 2022; ILO 2021; International Solid Waste Association [ISWA] 2022; World Wildlife Fund [WWF] 2022; Haq 2024; Hong Kong Research Institute of Textiles and Apparel Limited [HKRITA] and H&M Foundation. 2021; United Nations Centre for Regional Development [UNCRD] 2022).

Despite financial barriers, Cambodia's recycling SMEs are finding innovative pathways to scale operations, improve profitability, and contribute to a sustainable economy. By embracing cost-effective logistics, market-driven product diversification, and financial resilience strategies, these businesses are proving that circular economy initiatives can be both environmentally and economically viable. However, strengthening Cambodia's financial and policy ecosystem

remains essential. Targeted government incentives, infrastructure investments, and international collaboration can help unlock the full potential of plastic recycling as a profitable and impactful industry. With strategic support and forward-thinking financial models, SMEs in Cambodia can lead the way in transforming plastic waste into economic opportunity. **Text Box 3.2** illustrates cases of successful plastic recycling business models in Cambodia.

Text Box 3-2 Case Studies on Successful Plastic Recycling Business Models in Cambodia

1) TONTOTON- A Successful Recycling Business Model in Cambodia

TONTOTON is an innovative plastic management initiative in Cambodia, which provides a socially responsible and environmentally sustainable solution to plastic pollution. It is located in Street 702, Village 02, Sangkat 01 Preah Sihanoukville, Preah Sihanouk Province. Operating primarily in communities around coastal and urban areas, TONTOTON integrates community-driven actions with corporate responsibility through a unique business model known as "Plastic Credit".

Recycling Business Model and Operations

TONTOTON employs a "Plastic Credit" model where businesses offset their plastic footprints by investing in the collection and recycling of plastic waste. Companies acquire plastic credits corresponding to specified quantities of plastic waste by enabling TONTOTON to finance waste collection and recycling initiatives. These efforts particularly target plastics with minimal market value that are frequently overlooked, such as flexible packaging and multilayer plastics. TONTOTON is certified under both the Ocean Bound Plastic (OBP) Neutrality Standard and the Social+ OBP Standard. These certifications ensure ethical treatment and improve the well-being of waste pickers and their families, providing essential services, housing improvements (particularly for homes with children), and facilitating connections with social services and childcare NGOs. The operations are externally monitored by the Control Union to guarantee transparency and compliance. TONTOTON partners with local waste collection groups, informal waste pickers, and communities to gather plastic waste by providing them with fair wages and improved working conditions. In this manner, TONTOTON supports local economic empowerment while facilitating efficient and targeted plastic waste management (**Figure 3.22**).



Figure 3-22 TONTOTON's Community-Based Plastic Waste Collection and Recycling Operations in Cambodia
(Source: TONTOTON 2025)

Impacts, Achievements, and Challenges

TONTOTON's innovative model has significantly enhanced recycling rates for low-value plastics, contributed to economic stability, and improved conditions for informal collectors. Additionally, it has increased awareness of plastic waste management within the corporate sector both in Cambodia and on an international scale. The dual certification standards reinforce community-centered sustainability and accountability (TONTOTON 2025). However, scalability remains a challenge, specifically regarding maintaining consistent financial support from corporate clients. Expanding partnerships, enhancing public awareness, and establishing a robust market for plastic credits are identified as strategic priorities to overcome these challenges.

TONTOTON demonstrates a successful recycling business model by demonstrating that innovative financial mechanisms, such as Plastic Credits, combined with active community participation and corporate engagement, can effectively tackle plastic pollution. It serves as an exemplary model for sustainable recycling practices by highlighting the crucial role of private-sector innovation and cross-sector collaboration in addressing plastic waste management in Cambodia and other regions.

Source: TONTOTON (2025); World Economic Forum (2022)

2) Only One Planet (OOP)- A Successful Recycling Business Model in Cambodia

Only One Planet (OOP) is a pioneering social enterprise established in 2018 in Phnom Penh, Cambodia, dedicated to combating plastic pollution by offering sustainable alternatives to single-use plastics. OOP's mission is to provide practical, eco-friendly products and promote environmental awareness to drive behavioral change towards sustainability.

Recycling Business Model and Operations

OOP's business model focuses on replacing single-use plastics with biodegradable and reusable alternatives, particularly in the food and beverage industry. Key aspects of their operations include:

- **Product Innovation:** OOP introduced home-compostable, sugarcane-based food packaging as a sustainable alternative to Styrofoam containers commonly used by small food vendors and restaurants. They also offer reusable items made from glass and stainless steel, which can be customized using dye-sublimation printing technology. This approach allows small and medium-sized enterprises (SMEs) to brand their sustainable packaging without the need for large orders, reducing setup costs and waste (**Figure 3.23**).
- **Community Engagement:** OOP operates 'Be Eco Sustainable,' a collective of over 20 small businesses providing organic, plastic-free products. This initiative serves as a local resource center for eco-products, information, and services, including drop-off points for glass, hard plastics, and batteries, as well as repair services for various items.
- **Environmental Awareness:** OOP has organized more than 170 events and workshops on circular economy principles targeted at diverse audiences, including schools, NGOs, and community groups. They also created the website Eco-Business Cambodia, a searchable directory of businesses committed to reducing single-use plastic and other forms of waste, providing extensive environmental information to educate people about sustainability issues and practices in Cambodia.



Figure 3-23 Only One Planet (OOP)'s Initiative in Cambodia
(Source: Only One Planet 2025)

Impacts, Achievements, and Challenges

OOP's initiatives have led to significant environmental and social impacts:

- **Waste Reduction:** Through their efforts, OOP has replaced 4 million Styrofoam food boxes with compostable sugarcane-based products, 2.4 million pieces of plastic cutlery with wooden alternatives, and over 1 million plastic straws with recycled paper or noodle straws. Additionally, their reusable glass, stainless steel, and silicone items are projected to avoid the use of 5.2 million single-use plastic items.
- **Recycling Initiatives:** The 'Pay it Forward' community glass recycling program has enabled the recycling of a total of 50.3 tons of glass from October 2021 to March 2024, encouraging community participation in sustainability efforts.
- **Awareness and Education:** OOP's extensive outreach has promoted a broader understanding of the circular economy, influencing both consumer behavior and business practices towards sustainability.

Despite these achievements, OOP faces challenges in scaling operations due to limited cash flow and the need for external investment. The COVID-19 pandemic affected SMEs, particularly in the retail and tourism sectors crucial to OOP's operations. Additionally, stronger single-use plastic regulations and more accessible financial support for green SMEs in Cambodia are necessary to overcome traditional financing obstacles. Only One Planet exemplifies a successful recycling business model in Cambodia by integrating product innovation, community engagement, and environmental education. Their comprehensive approach not only addresses plastic waste reduction but also fosters a culture of sustainability within the community.

Source: SWITCH-Asia (2024); Only One Planet (2025)

3) Green Lotus Panel- A Successful Recycling Business Model in Cambodia

Green Lotus Panel, established in 2023, is Cambodia's first industrial-scale plastic recycling facility. The enterprise aims to address the country's escalating plastic waste problem by transforming high-density polyethylene (HDPE) plastics into eco-friendly panels. These panels are versatile and can be utilized in various applications, including furniture and construction materials (**Figure 3.24**).

Recycling Business Model and Operations

The core of Green Lotus Panel's business model involves upcycling plastic waste into valuable products. Key components of their operations include:

- **Material Sourcing:** The company focuses on collecting HDPE plastic waste, such as bottles and bottle caps, from landfills and other waste streams.
- **Production Process:** The collected plastics are processed into high-quality eco panels using specialized machinery. These panels can be sold directly to customers or further modified into items like furniture components.

- **Sustainability Commitment:** Green Lotus Panel emphasizes minimizing carbon footprints during production, ensuring fair labor conditions, providing safe products free from toxic substances, raising awareness of sustainability issues, and contributing to the UN Sustainable Development Goals related to job creation, decent labor conditions, sustainable materials, and responsible consumption and production.



Figure 3-24 Green Lotus Panel Facility in Cambodia
(Source: Green Lotus Eco Panels 2023)

Impacts, Achievements, and Challenges

Green Lotus Panel has made significant strides in promoting environmental sustainability and social responsibility:

- **Environmental Impact:** By upcycling approximately 14 tons of plastic annually, the company effectively reduces the volume of plastic waste destined for landfills, contributing to environmental preservation.
- **Economic and Social Contributions:** The enterprise has created employment opportunities, aiming to provide jobs for eight individuals, thereby supporting local communities and contributing to economic growth.
- **Product Innovation:** Through the production of eco-friendly panels, Green Lotus Panel challenges negative perceptions about recycled goods by offering high-quality, marketable products that appeal to consumers.

However, the company faces challenges such as changing public perceptions toward recycled products and ensuring a consistent supply of recyclable materials. To address these issues, Green Lotus Panel focuses on community engagement and education to promote the benefits of recycling and sustainability. Green Lotus Panel exemplifies a successful recycling business model in Cambodia by integrating environmental sustainability with economic development. Their innovative approach to plastic waste management not only addresses environmental concerns but also fosters social and economic benefits for local communities.

Source: Bookbridge (2024); Green Lotus Eco Panels (2023)

4) GOMI Recycle- A Successful Recycling Business Model in Cambodia

GOMI Recycle is a Japanese-owned enterprise operating in Cambodia, specializing in transforming plastic waste into functional materials and products. Established by CEO Yusuke Okumura, the company addresses the pressing issue of plastic pollution by converting discarded plastics into valuable items such as furniture and construction materials (Figure 3.25).

Recycling Business Model and Operations

GOMI Recycle's business model focuses on collecting and processing various types of plastic waste to manufacture durable products. Key components of their operations include:

- **Material Collection:** The company sources industrial and commercial plastic waste from Phnom Penh's Special Economic Zone (SEZ) and collaborates with local businesses to recover plastic waste from construction sites.
- **Production Process:** Utilizing advanced Japanese recycling technology, GOMI Recycle processes mixed plastic waste (excluding PVC) by melting it at high temperatures to create materials suitable for manufacturing tables, chairs, and construction bricks. These products are robust enough for use in infrastructure projects, including bridges and homes.
- **Product Development:** The recycled materials are crafted into urban furniture, trash bins, benches, and tables, catering to both local and international markets. This approach not only provides practical solutions but also promotes environmental sustainability by repurposing waste into functional items.



Figure 3-25 GOMI Recycle Enterprise in Cambodia
(Source: Molika and Hongseng 2024)

Impacts, Achievements, and Challenges

GOMI Recycle's initiatives have led to notable environmental and social impacts:

- **Environmental Impact:** By processing 2-3 tonnes of plastic waste per day, GOMI Recycle contributes to reducing the volume of plastic waste in Phnom Penh, where an estimated 600 tonnes of plastic waste is generated daily. This effort helps alleviate the burden on local landfills and mitigates environmental pollution.
- **Economic Contributions:** The company's operations create employment opportunities and stimulate economic activity within the recycling and manufacturing sectors in Cambodia.

- **Technological Innovation:** GOMI Recycle introduces advanced recycling techniques to Cambodia, setting a precedent for future waste management initiatives and showcasing the potential of technology in addressing environmental challenges.

Despite these achievements, GOMI Recycle faces challenges, including the need to scale operations to address the vast amounts of plastic waste generated daily and to secure a consistent supply of recyclable materials. Additionally, changing public perceptions towards recycled products and ensuring market acceptance are ongoing endeavors. GOMI Recycle exemplifies a successful recycling business model in Cambodia by integrating technological innovation with environmental sustainability. Their approach not only addresses the pressing issue of plastic waste but also contributes to economic development through job creation and the production of valuable goods.

Source: Molika and Hongseng (2024); Soksarim (2024)

5) One Earth – One Ocean (OEOO)- A Successful Recycling Business Model in Cambodia

One Earth – One Ocean e.V. (OEOO) is a German environmental organization dedicated to protecting aquatic environments by removing plastic waste from oceans and rivers. Since 2018, OEOO has been actively operating in Cambodia in collaboration with Cambodian Education and Waste Management Organization (COMPED), focusing on cleaning the Mekong River and its tributaries, which are significant contributors to marine plastic pollution (**Figure 3.26**).



Figure 3-26 One Earth – One Ocean (OEOO) Approach in Cambodia
(Source: One Earth – One Ocean e.V. 2022)

Recycling Business Model and Operations

OEOO's approach in Cambodia involves several key components:

- **Specialized Waste Collection Vessels:** OEOO utilizes custom-designed boats, such as the SeeHamster, a small catamaran equipped with a lowerable ramp, to efficiently collect plastic waste from rivers and coastal areas.
- **Local Collection Teams:** The organization employs local workers who operate these vessels, collecting waste five days a week. For instance, in Battambang, a team of five permanent employees collects up to 1.5 tonnes of waste daily, with approximately 20% being plastic.

- **Waste Processing Centers:** Collected waste is transported to OEEO's collection centers, where it is cleaned, dried, sorted into categories like PET and PE, and then pressed into bales for recycling. Residual waste is either sold to waste collectors or disposed of properly to prevent re-entry into waterways.
- **Community Engagement and Education:** OEEO conducts regular training sessions and lectures to educate local communities on waste prevention and recycling, fostering environmental awareness and encouraging sustainable practices.

Impacts, Achievements, and Challenges

OEEO's initiatives in Cambodia have led to significant environmental and social impacts:

- **Environmental Impact:** By removing substantial amounts of plastic waste from the Mekong River and its tributaries, OEEO helps reduce the flow of plastics into the ocean, addressing a critical source of marine pollution.
- **Economic and Social Contributions:** The organization's operations provide stable employment opportunities for local communities, contributing to economic development and improved livelihoods.
- **Technological Innovation:** OEEO's use of specialized vessels and equipment enhances the efficiency of waste collection and processing, setting a precedent for similar initiatives in other regions.

Despite these achievements, OEEO faces challenges such as securing consistent funding, expanding operations to cover more areas, and ensuring the sustainability of waste management practices in the long term. To address these issues, OEEO continues to seek partnerships and support from local and international stakeholders. One Earth – One Ocean's comprehensive approach to plastic waste management in Cambodia exemplifies a successful recycling business model that integrates environmental conservation with community involvement and technological innovation. Their efforts contribute significantly to reducing plastic pollution in one of the world's most affected regions, offering a replicable model for similar initiatives globally.

Source: One Earth – One Ocean e.V. (2022); KARCHER (2025)

6) E-Globbal- A Successful Recycling Business Model in Cambodia

E-Globbal was a Cambodian social enterprise that transformed plastic waste into high-quality, handmade handbags and accessories. By repurposing materials such as cement, rice, seed, and flour bags, E-Globbal aimed to address environmental pollution while providing economic opportunities for impoverished Khmer families (**Figure 3.27**).

Recycling Business Model and Operations

E-Globbal's business model focused on upcycling discarded plastic materials into marketable products, thereby creating a sustainable livelihood for local communities. Key components of their operations included:

- **Material Collection:** The enterprise collected used plastic bags and other recyclable materials from local communities, preventing these items from polluting rivers, beaches, and roadsides.
- **Production Process:** Collected materials were cleaned, cut, and sewn by Khmer families into durable, aesthetically pleasing handbags and accessories. This process not only reduced environmental waste but also provided direct employment opportunities, ensuring fair wages and minimizing corruption.
- **Community Engagement:** E-Globbal emphasized educating local communities about the importance of recycling and environmental conservation. They highlighted the detrimental effects of plastic pollution on agriculture and health, encouraging sustainable practices and waste management.



Figure 3-27 A Cambodian social enterprise, E-Globbal
(Source: Ourgoodbrands 2024)

Impacts, Achievements, and Challenges

E-Globbal's initiatives led to notable environmental and social impacts:

- **Economic Empowerment:** By involving Khmer families in the collection and production processes, E-Globbal provided alternative income sources, enabling families to afford education, healthcare, and improved living conditions. For instance, construction workers earning around 120 USD per month and rice growers, especially during the low season, benefited from additional income through E-Globbal's initiatives.
- **Environmental Conservation:** The enterprise's efforts in recycling plastic waste contributed to cleaner local environments, reducing pollution in rivers, beaches, and roadsides. This not only improved the aesthetic appeal of communities but also mitigated health risks associated with plastic waste.
- **Educational Outreach:** E-Globbal's educational programs raised awareness about the environmental hazards of plastic waste among Khmer communities, fostering a culture of sustainability and responsible waste management.

Despite these achievements, E-Globbal faced challenges, including the need for continuous community engagement to change long-standing habits related to waste disposal and securing consistent markets for their recycled products. E-Globbal exemplified a successful recycling business model in Cambodia by integrating environmental sustainability with economic development. Their approach not only addressed the pressing issue of plastic waste but also empowered local communities through employment and education, fostering a more sustainable and prosperous future.

Source: Ourgoodbrands (2024)

7) Sihanoukville's Zero-Waste Project- A Successful Recycling Business Model in Cambodia

Sihanoukville, a major coastal city in Cambodia, has faced significant challenges in waste management due to rapid urbanization and tourism growth. The city's waste generation reached approximately 450-500 tons per day by 2023, with only about 4% being recycled, leading to overreliance on landfills and associated environmental and health risks. In response, the Zero-Waste to Landfill Pilot Project was initiated in 2023 to promote sustainable waste practices and reduce landfill dependency (Figure 3.28).

Recycling Business Model and Operations

The project's approach to plastic waste management encompassed several key strategies:

- **Community Education:** Workshops and training sessions were conducted to raise awareness about waste sorting and recycling, fostering a culture of environmental responsibility among residents.
- **Infrastructure for Waste Sorting:** Color-coded bins were installed in 40 restaurants and a local school to facilitate the separation of recyclable materials, including plastics, from general waste.
- **Digital Data Recording:** The GEPP Sa-Ard platform was utilized to monitor waste collection and sorting activities, enabling data-driven decision-making and enhancing the efficiency of waste management processes.



Figure 3-28 Sihanoukville's Zero-Waste Project
(Source: UN Secretary-General's Advisory Board on Zero Waste 2025)

Impacts, Achievements, and Challenges

The Zero-Waste Project led to several notable outcomes:

- **Increased Recycling Rates:** The introduction of sorting infrastructure and educational initiatives resulted in higher recycling rates, reducing the volume of waste sent to landfills.
- **Enhanced Public Awareness:** Educational efforts improved community understanding of proper waste disposal and environmental stewardship, leading to more sustainable behaviors.
- **Data-Driven Waste Management:** The use of digital platforms facilitated accurate tracking of waste streams, allowing for more effective planning and policy development.

However, challenges such as limited public awareness of waste sorting, inadequate infrastructure, and inefficient recyclable material value chains were identified. Addressing these issues is crucial for the project's long-term success. Sihanoukville's Zero-Waste Project exemplifies a comprehensive approach to plastic waste management by integrating community education, infrastructure development, and technological innovation. The project's success highlights the importance of collaborative efforts and data-driven strategies in promoting sustainable waste management practices in urban settings.

Source: UN Secretary-General's Advisory Board on Zero Waste (2025)

Table 3-4 Summary Table: Case Studies vs. Business Models

Case Study	Collection-Based Model	Processing-Based Model	Sales-Based Model
TONTOTON	✓ Plastic credit, partnerships with informal waste pickers	✗	✓ Environmental monetization
OEOO	✓ Direct river plastic collection using boats	✓ Sorting and processing centers	✗
Sihanoukville Zero-Waste Project	✓ Community waste sorting & education	✓ Waste segregation at the source	✗
Green Lotus Panel	✗	✓ HDPE plastic recycling into construction panels	✓ Sustainable product sales
GOMI Recycle	✗	✓ High-tech processing into durable furniture	✓ Domestic & international sales
Only One Planet (OOP)	✓ Community-based waste collection & recycling	✓ Plastic-free packaging innovation	✓ SME branding & e-commerce
E-Globbal	✗	✓ Handmade upcycled fashion items	✓ Export-oriented sales

Collection-Based Models (e.g., TONTOTON, OEOO, and Sihanoukville's Zero-Waste Project) rely heavily on community engagement and informal waste networks. Processing-Based Models (e.g., Green Lotus Panel and GOMI Recycle) emphasize material transformation and product development. Sales-Based Models (e.g., OOP and E-Globbal) generate revenue through direct sales, branding, and international trade (**Table 3.4**).

These case studies show a promising economic feasibility of SMEs in plastic recycling sector; however, these initiatives are yet to reach a scale sufficient to address the plastic waste crisis. More SMEs can be seen in **Annex- Table A.4**. As the economic feasibility of plastic waste recycling depends on various factors, including market demand, policy support, investment costs, and operational efficiency, careful strategic interventions are necessary to make SMEs involvement in plastics recycling economically, socially and environmentally profitable. For instance, formalizing the informal waste sector would enhance operational efficiency, provide social protection, and ensure fair compensation for waste pickers, integrating them into a more structured circular economy framework. Investment in advanced recycling infrastructure and innovative technologies would boost domestic recycling capacity and reduce dependency on exports. Additionally, implementing Extended Producer Responsibility (EPR) schemes and establishing consistent waste management standards would strengthen the regulatory framework, and promoting public-private partnerships (PPPs) could overcome resource constraints and encourage investment in recycling infrastructure.

4. SME-LED PLASTIC WASTE RECYCLING IN CAMBODIA: CHALLENGES AND OPPORTUNITIES

The plastic recycling sector in Cambodia presents a mix of strengths, weaknesses, opportunities, and threats that influence its development and sustainability. The SWOT analysis for SMEs in plastic recycling sector in Cambodia is summarized in **Figure 4.1**.



Figure 4-1 SWOT Analysis of SMEs in the Plastic Recycling Market in Cambodia

4.1 Challenges: Unpacking the Struggle of SMEs

Despite their critical role in Cambodia's recycling ecosystem, SMEs face persistent challenges that hinder their growth and long-term sustainability.

Weakness – and – Threats

Weaknesses in the sector include limited financial resources, restricting investment in advanced recycling technologies and infrastructure. The inconsistent supply chain—affected by informal collection networks and fluctuating waste availability—hinders operational efficiency. Low technological capacity remains a major challenge, with most SMEs relying on basic processing methods, limiting their ability to compete with high-quality recycled materials from neighboring countries. Another critical challenge is the high energy consumption and outdated infrastructure in many recycling facilities. Large-scale enterprises, such as those processing polyethylene (PE), polypropylene (PP), and polystyrene (PS), require significant electricity use, adding to operational expenses. Smaller recyclers, on the other hand, often depend on semi-mechanical processes with limited automation, reducing their overall efficiency and output. Upgrading to modern recycling technologies remains financially out of reach for many businesses due to capital constraints and limited investment opportunities. Furthermore, skill gaps and labor shortages affect productivity, as many workers in the recycling sector lack formal training in advanced waste processing techniques.

Threats to the sector include regional competition from Thailand and Vietnam, where more developed recycling industries offer higher efficiency and lower production costs. Market volatility, including fluctuating prices for recycled materials and reliance on export markets, creates financial uncertainty for SMEs. Weak regulatory enforcement remains a concern, as the lack of strict plastic waste management policies and enforcement mechanisms limits the incentives for proper recycling. Finally, limited consumer acceptance of recycled products—due

to misconceptions about their quality and hygiene—poses a barrier to market expansion, requiring greater efforts in social marketing and awareness campaigns.

1. **Financial constraints** remain a major barrier, as many SMEs struggle to access capital for investing in advanced recycling technologies, storage facilities, and efficient logistics systems. Without financial support, businesses are unable to scale operations, improve efficiency, or enhance product quality. Additionally, Cambodia lacks financial products tailored to waste management, forcing SMEs to rely on NGOs, international donors, or high-interest loans for survival. Market instability further complicates the situation. Fluctuating prices for recycled materials, especially low-value plastics like LDPE, create revenue uncertainty, making it difficult for SMEs to maintain consistent cash flow. A lack of formalized policies supporting small recyclers exacerbates this issue, as Cambodia's waste management regulations favor large-scale operators while SMEs struggle with bureaucratic inefficiencies and limited access to official waste streams. The financial viability of plastic recycling initiatives in Cambodia depends on effective cost management, diversified revenue streams, and access to financial support. SMEs in this sector face substantial initial investment costs, including land acquisition, machinery, sorting and processing equipment, and transportation vehicles. Limited financing options make it challenging for SMEs to secure the capital required to establish recycling operations.

- **Investment and Operational Challenges:** Operational costs are another significant financial burden, encompassing labor, utilities, equipment maintenance, transportation, and storage expenses. SMEs often struggle with high energy costs due to the resource-intensive nature of plastic processing. Additionally, the fragmented supply chain necessitates sourcing raw materials from multiple locations, leading to elevated transportation costs. To minimize these expenses, SMEs are increasingly exploring bulk collection agreements, logistics optimization, and fuel-efficient transportation methods. Material acquisition costs also fluctuate depending on supply and demand. To stabilize costs and ensure consistent supply, SMEs are forming direct partnerships with suppliers, negotiating bulk purchase agreements, and investing in in-house collection systems (World Bank 2024; Verra 2022; Plastic Collective 2024; Sustainable Plastics 2024; The Asia Foundation 2024a).

- **Revenue Streams: Beyond the Sale of Recycled Plastic**
SMEs in Cambodia's recycling sector primarily generate revenue through the sale of recycled plastic materials such as pellets, flakes, and granules. These materials are sold to industries including packaging, construction, and consumer goods manufacturing. Domestic demand for recycled PET and HDPE is particularly strong in the packaging sector as companies seek sustainable alternatives to virgin plastics. In addition, regional demand within the ASEAN market offers lucrative export opportunities. However, successful market penetration requires adherence to international quality standards, driving SMEs to diversify into value-added products. The production of value-added products provides another revenue stream for SMEs, enabling them to capture premium prices by targeting niche markets. Products such as eco-bricks, recycled plastic containers, and consumer goods cater to environmentally conscious consumers and reduce dependency on bulk material sales. The growing demand for sustainable products in Cambodia's urban centers further enhances profitability. By expanding product lines and leveraging brand recognition, SMEs can access broader customer bases, ensuring sustainable growth (World Bank 2024; Verra 2022; Plastic Collective 2024; Sustainable Plastics 2024; The Asia Foundation 2024a).

- **Competition and Market Volatility**
SMEs may face competition from larger companies with more resources and established markets both inside the country and outside of the country. Cambodia's recyclers face intense competition from regional players, particularly in Thailand, Vietnam, and Indonesia, where advanced infrastructure, economies of scale, and strong government incentives support the recycling industry. These countries offer high-quality recycled materials at competitive prices, making it difficult for Cambodian recyclers to secure a foothold in regional and international markets.

Quality control also remains a challenge for Cambodian SMEs. The country's fragmented plastic supply chain, dominated by informal waste collectors, results in inconsistent material quality and limited access to high-value applications such as food-grade packaging and industrial plastics. Without standardized sorting and quality assurance mechanisms, Cambodian recyclers struggle to meet stringent ASEAN and international market requirements, restricting their ability to expand exports and attract high-value buyers. However, targeted investments in advanced sorting technologies, processing facilities, and certification programs could improve competitiveness. Additionally, formalizing the informal waste sector—through structured cooperatives or labor protections could stabilize material flows, improve quality, and integrate waste pickers into a more organized, efficient system.

2. **Regulatory constraints** are another challenge the SMEs face when new regulations are evolving. With the semi-formal nature of operations, these SMEs are left out from understanding, adapting and adhering to the regulatory needs in relation to waste processing and recycling. The SMEs face significant challenges due to limited funding, infrastructural constraints, and a lack of awareness, skills and resources to abide by these regulatory obligations.

This can be improved if policy and regulatory approaches are designed to reflect the specific characteristics of enterprises, including enterprise size, their business models, risk exposure, their position in the plastic recycling value chains and the context of their operations, whilst safeguarding the workers, SMEs and the environment through safe recycling. For instance, Government agencies see opportunities in promoting public-private partnership (PPP), or green bond or loan to overcome resource constraints and encourage investment in recycling infrastructure. However, this may be more suitable for large scale recyclers than SMEs. Rather subsidies for recycling equipment, streamlined licensing processes, and tax breaks can support SMEs in formalizing and expanding their recycling operations. By addressing these regulatory barriers, policymakers have an opportunity to create a more inclusive plastics sector—one that supports SMEs while advancing the country's goals for a circular economy.

3. SMEs may **lack access to the necessary technology and infrastructure, and technical expertise** to operate recycling facilities and manage recycling process effectively. This struggle with inadequate and low-tech technology and infrastructure not only limits their ability to expand and scale up the operations and meet growing demand for recycled plastic, but these also leak micro- and macro-plastics into the waterway (**Figure 4.2**). However, implementing simple yet effective technologies can be deployed to concentrate plastic waste at its source before it disperses further into ecosystems. For example, installing plastic compactors at key waste generation points, such as markets, industrial zones, and urban centers, can help reduce plastic volume, making collection and transportation more efficient (Mahidol University 2024b). Deploying filtration nets at drainage systems, canals, and river outlets can capture plastic waste before it enters larger water bodies, reducing leakage into natural environments and the ocean (Mahidol University 2024b).

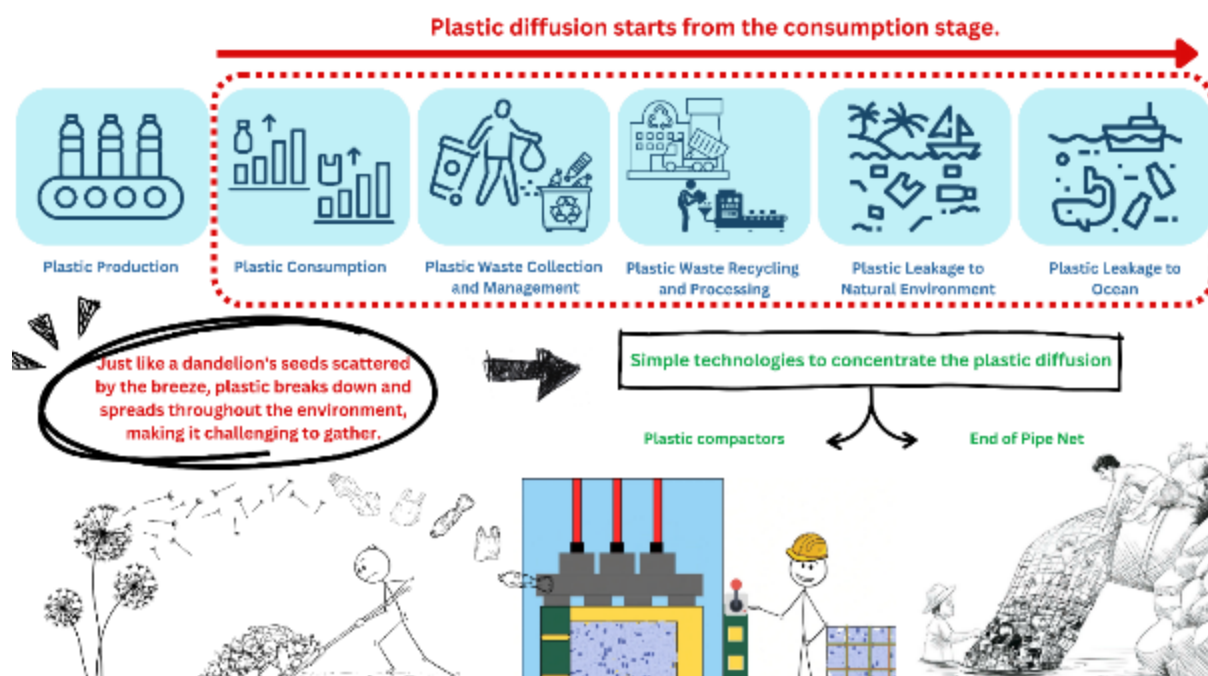


Figure 4-2 Preventing Plastic Diffusion Through Simple Technologies

Without greater financial support and technology and infrastructure improvements, these small and medium enterprises risk stagnation, limiting their potential impact on Cambodia's waste management system, and polluting the environment rather than contributing to circular plastic economy.

4. Lack of public awareness about the importance of recycling can lead to **lower participation rates**, both in terms of segregating recyclables plastic waste and consumer interest in recycled-content items, both affecting the operation of SMEs. However, these obstacles also present opportunities for targeted interventions that can enhance public participation, incentivize plastic recyclable waste segregation, integrate informal waste collectors into a more structured recycling system, and support local SMEs in the recycling sector (Fondazione 2015; Heng et al. 2008; The Better Cambodia 2022; Seng et al. 2018; GBN 2023).

It is evident that SMEs face several challenges that limit their ability to operate efficiently and expand their recycling activities. Access to finance is one of the most significant obstacles, as SMEs struggle to secure funding for investing in advanced recycling technologies, infrastructure, and equipment. Additionally, the lack of financial products tailored to the waste sector hampers their ability to scale operations or adopt innovative recycling methods. Market demand fluctuations further exacerbate these financial challenges, particularly for low-value plastics such as LDPE, which face inconsistent demand and volatile prices. Regulatory and bureaucratic hurdles, including complex licensing processes, also hinder SMEs' operational efficiency and growth.

Beyond financial and regulatory hurdles, workforce shortages and skill gaps pose additional challenges. Many workers lack formal training in waste sorting, handling, and advanced processing techniques, leading to high contamination rates and reduced recycling efficiency. Moreover, health and safety risks persist, as many waste collectors and recycling workers operate without proper protective gear or workplace safety protocols, exposing them to hazardous materials. Addressing these gaps through targeted investment in training programs, regulatory reforms, and financial mechanisms will be key to strengthening SME resilience and competitiveness in Cambodia's plastic recycling industry (Live & Learn Cambodia 2021; UNDP Cambodia 2022; People In Need Cambodia 2020).

4.2 Opportunities: Unlocking SME Growth and Integration into the Circular Economy

SMEs play a crucial role in Cambodia's plastic recycling market, significantly contributing to the collection, sorting, and initial processing of plastic waste. Their localized focus and adaptability make them an integral part of the informal and semi-formal waste management systems, bridging gaps in the country's formal infrastructure. By redirecting plastic waste from landfills and open dumps, SMEs not only support a more circular economy but also generate economic opportunities for local communities. Their involvement in the recycling chain is vital for enhancing resource efficiency, reducing environmental pollution, and fostering economic growth. However, despite their significant contributions, SMEs face several challenges, including financial constraints, inconsistent market demand, and limited regulatory support (GIZ 2021; Fauna & Flora International [FFI] 2020; The Asia Foundation. 2024b; The Asia Foundation 2024c; Cambodian Education and Waste Management Organization [COMPED] 2020; Cambodian Center for Study and Development in Agriculture [CEDAC] 2021; Young Eco Ambassadors [YEA] 2022; Cambodian Rural Development Team [CRDT] 2020; Khmer Green Charitable Trust [KGCT] 2021).

Strengths – and – Opportunities

The strengths of the sector include strong community involvement, as many SMEs integrate local waste pickers and small-scale collectors into their operations, generating social impact through job creation. SMEs also benefit from their local market presence, allowing them to cater to specific demands and navigate informal supply chains effectively. Additionally, innovative business models, such as plastic credits and decentralized waste collection, help SMEs attract funding and corporate partnerships.

Several opportunities exist for SMEs to expand and strengthen their role in Cambodia's recycling economy. The growing eco-tourism market presents an increasing demand for sustainable packaging and products, encouraging SMEs to develop value-added recycled goods. Additionally, international demand for recycled products is rising, particularly in markets where environmental regulations favor recycled plastics. SMEs can leverage support from international NGOs and public-private partnerships (PPPs) to access funding, technical assistance, and capacity-building programs. Moreover, emerging recycling technologies—such as chemical recycling and decentralized mobile processing units—offer potential solutions to improve plastic waste recovery and efficiency.

1. **Local presence and acceptance of SMEs** in the Cambodian plastic recycling scene. SMEs are the backbone of Cambodia's plastic recycling. SMEs create jobs, stimulate local economies, reduce dependence on virgin plastic materials, and integrate circular economy principles into Cambodia's plastic waste management system.
2. **Cambodian SMEs foster local communities and consumers involvement** as it directly collects recyclables from consumers. NGOs and social enterprises play a vital role in Cambodia's recycling sector by advocating for sustainable practices, conducting awareness campaigns, and implementing pilot programs for waste reduction and segregation, and recycling activities. They are also well-positioned to advocate for policy changes that support recycling practices, the formalization of informal waste workers, and incentives for SMEs. Additionally, NGOs can enhance their impact by offering technical support, training, and capacity-building programs, thereby strengthening the operational standards and productivity of local businesses and waste collectors.
3. **Government agencies and I/NGOs support in balancing regulation and resource constraints** through carefully considering the impacts on and perspectives of SMEs impacted by or associated with, and integrating informal waste collectors into the formal recycling sector presents a complex challenge, requiring regulatory adjustments and inter-agency coordination. Similarly, Government can bring policies that provides financial support and incentives and strengthen the SMEs. Some examples of financial support mechanisms to Cambodian SMEs include grants and low-interest loans provided by government programs, NGOs, and

international donors. These funds are crucial for supporting initial investments, operational expenses, and technology upgrades. Additionally, to build skill and capacity of the SMEs, collaborations between SMEs, NGOs, universities, and industry associations could facilitate workforce development, promote knowledge-sharing, and boost local recycling capabilities (Live & Learn Cambodia 2021; UNDP Cambodia 2022; People in Need Cambodia 2020).

Text Box 4.1 presents some examples from Asia where SMEs are accessing loans, grants or partnerships with NGO and international organizations, and private financiers.

Text Box 4-1 Examples of Government, Private Sector and Donor Financing support to SMEs

1) SME Bank of Cambodia

In Cambodia, SMEs are perceived as the backbone of the national economy, however the informal economy, such as family-run businesses, exclude them from accessing finance. To address this, the Cambodian government has established SME Bank of Cambodia to improve access to finance for SMEs in priority sectors. SME Bank of Cambodia was officially licensed as a commercial bank by the National Bank of Cambodia on the 27th of February 2020 and under the technical and financial guidance of the Ministry of Economy and Finance (MEF). The SME Bank of Cambodia is established with a mission to provide efficient and sustainable financing and commercial banking services to support SMEs to promote economic diversification and exports in line with government policy. The bank has introduced and implemented affordable financing schemes to support SMEs in the following priority sectors:

- Food manufacturing and processing encompass the conversion of agricultural commodities or plant-based materials into consumable food for humans. This is achieved through primary or whole processing, employing both machinery and manual labor.
- Manufacturing enterprises that produce consumables, parts, or components to supply other manufacturers, **process waste**, and produce goods for the tourism industry.
- Research and development in the field of information technology, including the provision of innovative system management services. This refers to the creation and supply of IT services linked to business and e-commerce.
- Enterprises located in the SMEs Cluster Zone.
- Enterprises that produce medical products and medicines, referring to businesses that manufacture equipment, facilities, and pharmaceuticals for the healthcare sector.
- Enterprises that provide services to support other businesses in priority sectors, as defined by the government. This refers to businesses that distribute and provide services to other priority sectors, including those with potential growth and those impacted by COVID-19.

Source: SME Bank of Cambodia (2024)

2) The Credit Guarantee Corporation of Cambodia (CGCC)

CGCC is a state-owned enterprise established by a Sub-Decree No. 140 ANKR.BK dated 01 September 2020. CGCC is operated under the technical and financial guidance of the Ministry of Economy and Finance (MEF). Its mission is to provide credit guarantees to lenders on loans made to businesses based on international standards to share the risk with lenders and to improve financial inclusion. CGCC was incorporated on 03 November 2020 and has been receiving technical support from Asian Development Bank (ADB), World Bank, and United Nations Capital Development Fund (UNCDF). CGCC launched the first guarantee scheme on 29 March 2021.

Source: Credit Guarantee Corporation of Cambodia [CGCC] (2024)

3) Attracting Private Sector Funding for Frontline Solutions to Plastic Pollution: TONTOTON's Plastic Credit Solution

Plastic credits are a financial mechanism that incentivizes plastic waste removal and recycling. TONTOTON, a social enterprise, through a certified plastic credit system, involves and empowers the informal waste sector and local communities to collect, recycle, upcycle and co-process ocean bound mismanaged plastic, creating a new market for 'orphan' plastic. TONTOTON's Plastic Collection Centers in the coastal areas of Cambodia are helping to stop plastic pollution and its flow into the ocean while strengthening vulnerable communities. Non-recyclable plastic has traditionally not been collected by informal waste pickers because it has no market value and is collected through TONTOTON community network and waste pickers. Waste pickers are financially compensated for every kilogram they collect, providing additional income and support for their families.

In Sihanoukville, TONTOTON's material recovery facility (MRF) plastic waste collected by engaging community (200 household partnerships) is sorted into three categories: recyclable sent to recyclers, hard-to-recycle processed at TONTOTON factory, and commercially non-recyclable used as waste to energy. Hard-to-recycle materials are cleaned, shredded, and transformed through a unique heat and press process into strong recycled plastic boards. These are utilized for building classrooms, furniture, and impact products. PET is directed to a bottle-to-bottle factory, and degraded plastic is sent for co-processing.

TONTOTON is the first company worldwide certified under the Ocean Bound Plastic Neutrality Standard. The plastic credits created by TONTOTON can be purchased by companies and other organizations, or by individuals seeking to compensate their plastic footprint or wishing to contribute to cleaning up the environment for charitable purposes. Through plastic credit mechanism, TONTOTON drives private sector funding to plastic collection and recycling solutions (Figure 4.3).



Figure 4-3 TONTOTON's Plastic Credit Solution

Source: TONTOTON (2025)

4) Private Financiers Financing SMEs for Plastic Recycling: The Circulate Capital

Circulate Capital finances innovations that prevent the flow of plastic waste into the world's oceans. The Circulate Capital Ocean Fund (CCOF) provides both debt and equity financing to waste management, recycling, and circular economy start-ups and SMEs in India, Indonesia, Thailand, Vietnam and the Philippines. CCOF helps with solutions to scale and replicate by connecting them to the supply chains of the world's leading companies.

CIRCULATE CAPITAL OCEAN FUND I – B aims to provide equity and quasi-equity support to SMEs that prevent plastic pollution and advance the circulate economy in Asia. The fund will target investments mainly in India, Indonesia, Thailand, Vietnam, the Philippines, and Malaysia. The fund has a focus on companies with a positive climate and sustainability impact in line with the objectives of the EIB Climate Bank Roadmap and the Clean Oceans Initiative.

Cambodian SMEs can also take advantage of such private financing.

Source: Circulate Capital (2025)

5) Promoting Long-term Approaches for a Sustainable, Transformative and Inclusive Circular Economy in Sri Lanka (PLASTICS) Project, Sri Lanka: Targeted Grants Support to SMEs

Funded by the European Union, the PALSTICS project aims to facilitate sustainable and innovative plastic minimization and management in Sri Lanka by integrating SMEs in greener value and supply chains (V/SC), thereby contributing to economic prosperity and environmental sustainability. The specific objective is to improve economic development within the plastic V/SC through SME resource efficiency, circular innovation, green finance, and sustainable waste management (SWM) frameworks in Sri Lanka's Western Province.

The PLASTICS project aims to facilitate plastic waste minimization and management in Sri Lanka by integrating 150 target small and medium enterprises (SMEs). In addition to the SMEs, the project will directly benefit 10 entrepreneurs, 50 business development service providers, and 10 financial institutions, and cover an estimated 5.82 million household level consumers as indirect beneficiaries.

Source: Agency for Technical Cooperation and Development [Acted] (2022)

Sustainability-linked finance and impact investment are emerging as alternative funding sources for environmentally responsible SMEs. These financing options prioritize social and environmental impacts alongside financial returns, making them suitable for circular economic initiatives. The World Bank has approved a USD 60 million project to enhance solid waste and plastic management, aiming to improve waste collection, recycling, and disposal systems. Additionally, the "Plastic Smart Cambodia" project promotes sustainable packaging and waste management practices among SMEs, supported by the European Union and implemented by CARE Cambodia. Green bonds, ESG investment funds, and social impact bonds provide flexible terms and repayment options, allowing SMEs to scale operations and access premium markets. By attracting sustainable financing, SMEs in Cambodia can enhance their contributions to environmental sustainability while achieving long-term growth.

4. Technological Advancement opportunities: Advancements in recycling technologies could unlock new processing methods for low-value plastics. Innovations such as chemical recycling and plastic-to-fuel conversion offer solutions for processing non-recyclable or contaminated plastic waste, reducing landfill dependency while generating new revenue streams.

- **Innovative Market Development and Product Diversification**

The growing demand for eco-friendly products presents a major opportunity for Cambodian recyclers to expand into new markets. By shifting focus from raw recycled materials to value-added products, SMEs can diversify revenue streams and capture higher profit margins. Promising product lines include:

- Eco-bricks and construction materials for affordable, sustainable building solutions
- Recycled plastic furniture and home goods, catering to eco-conscious consumers
- Reusable packaging solutions, offering alternatives to single-use plastics
- Upcycled fashion and artisanal products, tapping into premium, ethical consumer markets.

- **Standardization, Certification, and Competitive Edge in the ASEAN Market**

Regional and global demand for certified recycled materials is rising, especially in Southeast Asia and Europe, where sustainability regulations favor recycled content. By adhering to international quality standards and certification programs, Cambodian recyclers can expand export opportunities, strengthen their competitive position, and secure contracts with global buyers (Live & Learn Cambodia 2021; UNDP Cambodia 2022; People in Need Cambodia 2020). To strengthen Cambodia's regional and international competitiveness, the country must develop standardized certifications for recycled plastics. A quality assurance system aligned with ASEAN and global standards would:

- Increase buyer confidence and market acceptance of Cambodian recycled products
- Facilitate easier access to regional trade opportunities
- Help SMEs target premium markets for food-grade packaging, industrial applications, and high-value exports.

Government agencies, industry stakeholders, and international partners should collaborate to create and enforce certification programs, positioning Cambodia's recyclers for long-term economic and environmental success (Mordor Intelligence 2024; The Circulate Initiative 2023; Asia News Network 2022; B2B Cambodia 2021).

5. Enhancing profitability of SMEs

- **Cost Optimization and Revenue Generation Strategies** – To enhance profitability, SMEs can adopt cost-saving and efficiency-driven strategies, including:

- Route optimization technologies to reduce transportation costs
- Energy-efficient recycling methods to lower operational expenses
- Community-based waste segregation programs to minimize contamination and improve processing efficiency.

Additionally, waste-to-resource innovations such as pyrolysis for plastic-to-fuel conversion could allow SMEs to repurpose low-value plastics into commercially viable products like construction materials and alternative fuels. Beyond traditional sales, plastic credit programs where businesses monetize environmental impact through corporate sustainability offsets offer an emerging revenue stream. International impact investments, grants, and government incentives could further support the scaling and modernization of recycling enterprises (Ellen MacArthur Foundation 2021; UNEP 2022; Chaturvedi and Visvanathan 2020; Organisation for Economic Co-operation and Development [OECD] 2023; Sustainable Development Policy Institute [SDPI] 2023).

- **Profitability Indicators and Financial Viability: Measuring Long-Term Success**

To assess financial viability, SMEs conduct break-even analyses to determine the minimum output required to cover fixed and variable costs. This is particularly important given the high initial capital investments and recurring operational expenses. Seasonal variations in supply and demand, as well as fluctuations in raw material costs, can significantly impact on the break-even point. A key metric in assessing financial sustainability is Return on Investment (ROI), which is influenced by operational efficiency, product quality, and market reach. High ROI can be achieved through process optimization, product diversification, and leveraging government

incentives, such as subsidies for energy costs or tax breaks for sustainable businesses. Additionally, cash flow management remains critical, as cyclical demand patterns and delayed payments from buyers can create financial instability. SMEs that establish long-term contracts, explore financing options, and build diverse revenue streams are better positioned to weather financial uncertainties.

Despite the challenges, Cambodia's plastic recycling industry holds significant opportunities for SMEs, particularly those willing to innovate, collaborate, and integrate into circular economy models. Expanding financial support mechanisms, such as low-interest loans, grants, and tax incentives, would enable SMEs to invest in modern sorting equipment, energy-efficient recycling technologies, and larger processing facilities. Public-private partnerships (PPPs) could also help SMEs gain access to formal waste streams, advanced processing infrastructure, and long-term supply contracts, ensuring financial stability. Capacity-building initiatives including training in waste management best practices, safety protocols, and efficient recycling techniques would enhance productivity, reduce material contamination, and improve quality control.

5. RECOMMENDATIONS & FUTURE OUTLOOK OF CAMBODIA'S PLASTIC RECYCLING SECTOR

The country's rapid urbanization, increasing plastic consumption, and limited waste infrastructure have contributed to an escalating plastic pollution crisis in Cambodia. While the formal waste management system primarily focuses on collection and disposal, the recycling sector remains largely informal, with SMEs, waste pickers, social enterprises and NGOs playing a crucial role in plastic recovery and processing. Despite their contributions, SMEs in the recycling industry struggle with financial constraints, inconsistent material supply, low technological capacity, and regulatory hurdles that limit their scalability and competitiveness. At the same time, Cambodia's plastic waste management and recycling also holding immense potential for transformation. Making plastic recycling feasible in Cambodia through SMEs involves addressing a range of logistical, financial, and regulatory challenges while also capitalizing on the entrepreneurial spirit and local knowledge SMEs offer. To drive Cambodia toward a sustainable plastic waste management system and unlock the potential of the recycling sector, the following strategic interventions are recommended:

1. Framing SME inclusive policies and regulatory frameworks

The government should establish clear policies that create more includes and supports SMEs while advancing the country's goals for a circular economy. These policy instruments must enable a just transition for the people informally collecting waste and SMEs that recycling waste.

- **Implement and Enforce Extended Producer Responsibility (EPR):** The government should mandate a just and inclusive EPR system to ensure investment in collection and recycling infrastructure without leaving behind the informal waste sector and SMEs.
- **Develop Standardized Certification for Recycled Plastics:** Establish national quality standards for recycled materials to enhance their marketability in regional and global supply chains.
- **Improve Waste Segregation Policies:** Introduce stricter waste segregation regulations and provide incentives for households and businesses to separate recyclable materials at the source.
- **Support for Exporting Recycled Materials:** Work to facilitate the export of high-quality recycled materials, especially for SMEs that cannot find enough local demand for their products

2. Enhancing Financial and Investment Support for SMEs

Government, private financing and donor funding should facilitate access to affordable financing for SMEs involved in the recycling sector.

- **Increase Access to Low-Interest Loans and Grants:** Provide SMEs in the recycling sector with better access to financing options, including green funds and impact investment programs.
- **Tax Incentives for Sustainable Businesses:** Offer government subsidies, tax breaks, or other financial incentives to SMEs that invest in recycling technologies, sustainable product development, and waste management innovations.
- **Encourage Investment in Advanced Recycling Technologies:** Promote the adoption of chemical recycling, pyrolysis, and plastic-to-fuel conversion to process currently hard-to-recycle or unrecyclable plastics.

3. Expanding innovative financing mechanisms for SMEs

- **Encourage Corporate Participation in Plastic Credit Programs:** Promote private sector engagement in plastic offset initiatives, such as TONTOTON's plastic credit model, to finance waste collection and recycling.
- **Develop Public-Private Partnerships for Recycling Infrastructure:** Collaborate with multinational corporations and development agencies to build modern recycling facilities and ensure consistent supply chains.

4. Formalizing the Informal Waste Sector and SMEs

- **Integrate Informal Waste Collectors into Cooperatives:** Provide legal recognition, fair wages, and improved working conditions to waste pickers to ensure their participation in a structured and fair recycling system.
- **Encourage and incentivize the unregistered SMEs to officially register**
- **Provide Training and Capacity Building** to informal waste workers and SMEs to improve their skills in plastic waste sorting, recycling, and sustainable business practices.
- **Establish Social Protection Programs** ensuring access to health and safety protections, stable employment contracts, and financial inclusion mechanisms.

5. Creating Recycling Ecosystems

- **Simplify plastic waste collection system by establishing local collection hubs, mobile collection units, and recycling cooperatives that are managed by SMEs,** to create synergies for local recycling.
- **Collaborations with International Organizations:** Collaborate with international development agencies or NGOs to provide technical, financial, and capacity building and skill enhancement support to SMEs
- **Promoting Local Demand for Recycled Products** by facilitating partnerships between recycling SMEs and local industries (e.g., construction, agriculture, textiles) to create a market for recycled plastic products
- **Launch pilot projects** that test different plastic recycling business models at the SME level for large-scale adoption of these methods
- **Collaborate with Universities and Research Institutions** to explore new ways to recycle plastics, focusing on low-cost and scalable solutions that suit Cambodia's needs.
- **Encourage SMEs to explore and invest in low-cost, innovative recycling technologies** that are adaptable to local conditions, such as compact plastic shredders or small-scale extruders.
- **Engage in raising public awareness and consumer engagement programs** to build long-term behavioral shifts toward sustainability such as promoting responsible plastic use, waste segregation, and recycling participation at the household level, and encouraging consumer Demand for Recycled Products.

6. Strengthening Regional and International Collaboration

- **Align Cambodia's Recycling Standards with ASEAN and Global Markets:** Ensure that the country's recycling practices, and quality certifications align with international requirements to improve export potential.
- **Expand Trade Partnerships for Recycled Materials:** Strengthen trade relationships with regional markets in Southeast Asia and beyond to create stable demand for Cambodia's recycled products.

By implementing these strategies, Cambodia can create a thriving network of SMEs and move toward a more structured, financially viable, and environmentally sustainable plastic waste management system.

6. CONCLUSIONS

Cambodia's plastic waste management system faces significant challenges due to rising waste generation, inefficient waste collection, and inadequate recycling infrastructure. The country produces over 936,225 tons of plastic waste annually, yet only 5% is collected for recycling. Approximately 35% of this waste is openly dumped, burned, or discarded in the water bodies. Waste collection efficiency is highly uneven: urban areas like Phnom Penh achieve an impressive 92% collection rate, while provinces such as Prey Veng (16%) and Takeo (19%) struggle with limited services. The country remains reliant on landfills (164 sites) and incinerators (54 facilities), but poor management practices exacerbate pollution risks and environmental degradation.

The recycling sector in Cambodia is largely informal, dominated by waste pickers known as “Ed Jais,” with limited large-scale recycling facilities. This has led to a heavy reliance on exporting waste for processing. Small and medium-sized enterprises (SMEs) play an integral role in the plastic recycling value chain, contributing to collection, sorting, and processing efforts. However, business models within the sector vary widely, including collection-based, processing-based, and sales-based models, each offering distinct advantages and challenges. Key recycling approaches include mechanical recycling, the use of plastic in road construction, the creation of eco-bricks, and waste-to-energy solutions. Despite their potential, financial and technological barriers limit the scalability and effectiveness of these methods.

In conclusion, while Cambodia's SMEs are essential to advancing the plastic recycling sector and promoting a circular economy, they face significant challenges. These include limited access to technology, inadequate financial support, regulatory hurdles, and market uncertainties. To ensure the feasibility and success of SME-led plastic recycling, strategic interventions are needed. This includes strengthening policy frameworks, improving waste collection infrastructure, providing better access to finance, and offering market incentives to stimulate innovation. Public engagement and education in recycling practices are also crucial to ensuring long-term sustainability and growth in the sector. By addressing these systemic issues, Cambodian SMEs can lead the path to a more resilient, efficient, and sustainable plastic recycling industry, benefiting both the economy and the environment.

7. REFERENCES

A1 Plastics Resources Company (2023). A1: About us. <https://a1-plastics.com/about-us>.

Aczel, D. and Aczel, M. (2021). *From Plastic to Fantastic: Circular Economy Strategies for Southeast Asia*. Retrieved from <https://leadersinenergy.org/from-plastic-to-fantastic-promoting-the-circular-economy-in-cambodia/>.

Agency for Technical Cooperation and Development (2022). PLASTICS: Promoting Long-term Approaches for a Sustainable Transformative and Inclusive circular Economy in Sri Lanka. <https://www.acted.org/en/projects/plastics-promoting-long-term-approaches-for-a-sustainable-transformative-and-inclusive-circular-economy-in-sri-lanka/>.

Asia News Network. (2022). *Cambodian recycler processes up to 100 tonnes of waste a day*. Retrieved from <https://asianews.network/cambodian-recycler-processes-up-to-100-tonnes-of-waste-a-day/>.

Asian Development Bank (2020). *Asia small and medium-sized enterprise monitor 2020: Volume III – Regional review*. Asian Development Bank.

Asian News Network. (2025). *Transforming waste into construction gold: Cambodian company build winning formula*. Retrieved from <https://asianews.network/transforming-waste-into-construction-gold-cambodian-company-build-winning-formula/>.

Association of Southeast Asian Nations (2021). *ASEAN Regional Action Plan for Combating Marine Debris (2021–2025)*. Retrieved from https://asean.org/wp-content/uploads/2021/05/FINAL_210524-ASEAN-Regional-Action-Plan_Ready-to-Publish_v2.pdf.

Association of Southeast Asian Nations (2024). *ASEAN Declaration on Plastic Circularity*. Retrieved from https://asean.org/wp-content/uploads/2024/10/23-Final_ASEAN-Declaration-on-Plastic-Circularity.pdf.

Association of Southeast Asian Nations Secretariat. (2022). *Decentralized Waste Management in Southeast Asia: Guidelines and Case Studies*. ASEAN Publications.

B2B Cambodia (2021). *Businesses in Cambodia embracing recycling*, 10 March. <https://www.b2b-cambodia.com/news/businesses-in-cambodia-embracing-recycling/>.

Basak, S., & Khatun, S. (2021). *Waste Management in Developing Countries: Opportunities and Challenges*. Environmental Science and Policy, 126, 25–34.

Bookbridge (2024). Green Lotus Panel Initiative. Retrieved from <https://www.bookbridge.org/post/upcycling-plastic-in-cambodia>.

Bookbridge (2025). *Upcycling plastic in Cambodia*. Retrieved from <https://www.bookbridge.org/post/upcycling-plastic-in-cambodia>.

Cambodian Center for Study and Development in Agriculture (2021). *Community-Based Waste Management Initiatives in Rural Cambodia*. CEDAC.

Cambodian Education and Waste Management Organization (2020). *Integrating Informal Waste Collectors into the Formal Waste Management System in Cambodia*.

Cambodian Rural Development Team (2020). *Integrating SMEs into Sustainable Waste Management in Rural Cambodia*.

Chaturvedi, B., & Visvanathan, C. (2020). *Plastic Waste Recycling in Developing Countries: Case Studies and Business Models*. Asian Institute of Technology.

Chaturvedi, B., Arora, R., & Saluja, M. S. (2015). Informal recycling sector in Asia: A comparative study of options for integration. *Waste Management & Research*, 33(12), 1063–1073.

Circulate Capital (2025). Invest for CIRCULARITY +VALUE +IMPACT. <https://www.circulatecapital.com/>.

Cohen, M. J., & Nussbaum, R. (2023). *The Role of Informal Waste Workers in Recycling: Environmental Impacts and Policy Recommendations*. *Environmental Management*, 64(2), 233–245.

Credit Guarantee Corporation of Cambodia (2024). CGCC's Guarantee Progress in a Glance. <https://www.cgcc.com.kh/en/>.

Delterra (2023). *MAKING 'CENTS' OF RECYCLING BEHAVIOR: THE RETURN ON INVESTMENT OF SPREADING THE RECYCLING HABIT*. Retrieved from <https://www.thecirculateinitiative.org/wp-content/uploads/Making-Cents-of-Recycling-Behavior-The-Return-on-Investment-of-Spreading-the-Recycling-Habit.pdf>.

Deutsche Gesellschaft für Internationale Zusammenarbeit (2021). *Plastic waste management and the circular economy: Supporting SMEs in Southeast Asia*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

Deutsche Gesellschaft für Internationale Zusammenarbeit (2024). *Towards a Sustainable Future: Recommendations for a Just Transition in Waste Management and Circular Economy in the ASEAN Region*. Retrieved from <https://www.giz.de/en/downloads/giz2024-en-just-transition-report.pdf>.

Dias, S. M. (2016). Waste pickers and cities. *Environment and Urbanization*, 28(2), 375–390.

Eco-Business Cambodia (2025). *Recyclers in Cambodia*. <https://www.eco-business-cambodia.com/recyclers>.

Economic Research Institute for ASEAN and East Asia (2023). *Plastic waste management: Future opportunities and private sector's good practices in Cambodia*.

Ellen MacArthur Foundation. (2021). *Completing the Picture: How the Circular Economy Tackles Climate Change*. Retrieved from <https://www.ellenmacarthurfoundation.org>.

Fauna & Flora International (2020). *Investigating solutions to marine plastic pollution in Cambodia: A review and synthesis of scoping research from coastal and marine sites*. Fauna & Flora International Cambodia Programme.

Fondazione ACRA. (2015). *Market Research Report on Plastic Waste Reduction in Cambodia*. Retrieved from https://www.switch-asia.eu/site/assets/files/2055/market_research_report.pdf.

Fortune Business Insights. (2024). *Recycled plastics market trends*. Retrieved from <https://www.fortunebusinessinsights.com/recycled-plastic-market-102568>.

GA Circular. (2019). *Full Circle – Accelerating the Circular Economy for Post-Consumer PET Bottles in Southeast Asia*. https://www.gacircular.com/_files/ugd/d424f7_d612161763824d3b9fbbf00affea9a9f.pdf

GBN. (2023). *PARTNERSHIP READY CAMBODIA: WASTE MANAGEMENT*. Retrieved from https://www.giz.de/en/downloads/GBN_Sector%20Brief_Kambodscha_Waste_E_WEB.pdf.

Geng, Y., & Doberstein, B. (2021). *Urban Waste Management in Developing Countries: A Case Study of Drop-Off Centers*. *Journal of Cleaner Production*, 299, 126817.

Grand View Research. (2024). *Recycled plastics market size, share & growth report, 2030*. Retrieved from <https://www.grandviewresearch.com/industry-analysis/recycled-plastics-market>.

Green Lotus Eco Panels. (2023). *GREEN LOTUS ECO PANELS*. <https://www.glecopanel.com/>.

Haq, O. (2024, March 15). *Exploring Circular Business Solutions for an Inclusive and Green Economy*. Oxfam in Cambodia. Retrieved from <https://cambodia.oxfam.org/latest/stories/exploring-circular-business-solutions-inclusive-and-green-economy>.

Heng, N., Laptaned, U., & Mehrdadi, N. (2008). *Recycling and Reuse of Household Plastics in Cambodia*. *International Journal of Environmental Research*, 2(1), 27–36. Retrieved from <https://www.bioline.org.br/request?er08004>.

Hong Kong Research Institute of Textiles and Apparel Limited (HKRITA) & H&M Foundation. (2021, October 12). *The Green Machine to Transform Textile Recycling in Cambodia*. Retrieved from <https://hmfoundation.com/2021/10/12/the-green-machine-to-transform-textile-recycling-in-cambodia/>.

International Finance Corporation (2019). *Creating markets for climate business: An IFC climate investment opportunities report*. IFC. https://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/financial+institutions/publications/creating+markets+for+climate+business+-+sme+sector.

International Finance Corporation. (2022). *Investing in Circular Economy: Business Models and Financing Opportunities in Emerging Markets*. World Bank Group.

International Labour Organization (2015). *Small and medium-sized enterprises and decent and productive employment creation*. ILO Report for the G20 Employment Working Group. Geneva: ILO.

International Labour Organization. (2021). *The Role of the Informal Economy in Waste Management: Experiences from Developing Countries*. ILO.

International Solid Waste Association (ISWA). (2022). *Integrating the Informal Waste Sector for Circular Economy Success: Policies, Partnerships, and Practices*. ISWA Publications.

Jambeck, J. R., Geyer, R., Wilcox, C., Siegler, T. R., Perryman, M., Andrady, A., Narayan, R., & Law, K. L. (2015). Plastic waste inputs from land into the ocean. *Science*, 347(6223), 768–771.

KARCHER (2025). Bags of help in the war on plastic waste in the ocean. Retrieved from <https://www.kaercher.com/int/inside-kaercher/sustainability/bags-of-help-in-the-war-on-plastic-waste.html>.

Khmer Green Charitable Trust (2021). *Promoting Circular Economy through SME Participation in Cambodia*.

Khmer Times. (2020). *Waste-to-energy project in Phnom Penh proposed*. Retrieved from <https://www.khmertimeskh.com/700938/waste-to-energy-project-in-phnom-penh-proposed/>.

Khmer Times. (2021). *Turning waste plastic into a sustainable Cambodian industry*. Retrieved from <https://www.khmertimeskh.com/50936814/turning-waste-plastic-into-a-sustainable-cambodian-industry/>.

Khmer Times. (2023). *Plastic control key for Cambodia to create circular economy*. Retrieved from <https://www.khmertimeskh.com/501306321/plastic-control-key-for-cambodia-to-create-circular-economy/>.

Kiripost. (2022). *Trash for Cash Scheme Aims to Clean Up Cambodian Coast*. Retrieved from <https://kiripost.com/stories/trash-for-cash-scheme-aims-to-clean-up-cambodian-coast>.

Lebreton, L., Slat, B., Ferrari, F., Sainte-Rose, B., Aitken, J., Marthouse, R., Hajbane, S., Cunsolo, S., S., Schwarz, A., Levivier, A., Noble, K., Debeljak, P., & Reisser, J. (2018). Evidence that the Great Pacific Garbage Patch is rapidly accumulating plastic. *Scientific Reports*, 8(1), 4666.

Live & Learn Cambodia. (2021). *Empowering Communities for Plastic-Free Waterways*. Live & Learn Cambodia.

Lyons, Y., Neo, M.L., Lim, A., Tay Y.L. and Vu Hai D from NUS (2020) *Status of Research, Legal and Policy Efforts on Marine Plastics in ASEAN+3: A Gap Analysis at the Interface of Science, Law and Policy*, COBSEA and NUS. Available at: <https://cil.nus.edu.sg/research/special-projects/#pollution-frommarine-plastics-in-the-seas-of-asean-plus-three>.

Mahidol University (2024a). *The stocktaking of tools and protocols for monitoring plastic pollution in Lower Mekong River Basin*. Bangkok, Thailand: UNEP.

Mahidol University (2024b). *Plastic Waste Management Best Practices in Thailand*. Bangkok, Thailand: UNEP.

Medina, M. (2007). *The world's scavengers: Salvaging for sustainable consumption and production*. AltaMira Press.

Ministry of Environment, Cambodia. (2020). *State of Waste Management in Phnom Penh, Cambodia: Version 2*. Prepared by IGES Centre Collaborating with UNEP on Environmental Technologies (CCET).

Ministry of Environment, Cambodia. (2021). *Municipal Solid Waste Generation in the Municipality and Provinces of Cambodia, 2008–2022*. Ministry of Environment (MoE); Phnom Penh, Cambodia. [[Google Scholar](#)].

Ministry of Environment, Cambodia. (2023). *CODE ON ENVIRONMENT AND NATURAL RESOURCES*. Retrieved from <https://www.moe.gov.kh/wp-content/uploads/2024/07/Code-on-Environment-and-Natural-Resources.pdf>.

Ministry of Environment, Cambodia. (2024). *Workshop sums up the results of environmental protection work in 2024 and work directions for 2025*.

Mobility Foresights. (2024). *Asia recycled polymers market size and forecast 2030*. Retrieved from <https://mobilityforesights.com/product/asia-recycled-polymers-market/>.

Molika, M. and Hongseng, R. (2024). Making Furniture from Recycled Materials, KiriPost, 4 April. Retrieved from <https://kiripost.com/stories/making-furniture-from-recycled-materials>.

Mordor Intelligence. (2024). *South-East Asia (SEA) plastics market size*. Retrieved from <https://www.mordorintelligence.com/industry-reports/south-east-asia-sea-plastics-market>.

One Earth – One Ocean e.V. (2022). *Oeoo in Cambodia*. Retrieved from <https://oneearth-oneocean.com/en/our-projects/oeoo-in-cambodia/>.

Only One Planet. (2025). *Only One Planet: Stop Single Use Plastic*. Retrieved from <https://onlyoneplanetkh.com/>.

Organisation for Economic Co-operation and Development. (2023). *Business Models for Circular Plastics*. Organisation for Economic Co-operation and Development.

Ourgoodbrands (2024). *Disrupting business in Cambodia with handbags made from recycled materials*. Retrieved from <https://ourgoodbrands.com/disrupting-business-cambodia-handbags-recycled-materials/>.

People In Need Cambodia. (2020). *Innovative Waste Solutions: Community-Based Recycling Projects in Cambodia*.

Pheakdey, D. V., Quan, N. V., Khanh, T. D., & Xuan, T. D. (2022). Challenges and Priorities of Municipal Solid Waste Management in Cambodia. *International journal of environmental research and public health*, 19(14), 8458. <https://doi.org/10.3390/ijerph19148458>

Plastic Collective. (2024). *World Bank Plastic Waste Reduction-Linked Bond FAQ*. Retrieved from <https://www.plasticcollective.co/world-bank-plastic-waste-reduction-linked-bond-faq/>.

Recycling Magazine. (2016). *Japan's GOMI Recycle 110 seeks to invest in plastics recycling factory in Cambodia*. Retrieved from <https://www.recycling-magazine.com/2016/07/21/japans-gomi-recycle-110-seeks-to-invest-in-plastics-recycling-factory-in-cambodia/>.

Regional Knowledge Centre for Marine Plastic Debris (2025). *Extended Producer Responsibility (EPR) for Plastics and Packaging*. <https://rkcmpd-eria.org/extended-producer-responsibility/legal-framework/cambodia>.

S&P Global Commodity Insights. (2024). *Asia recycled polymers: Sustainable plastics, sustainable outlook?* Retrieved from <https://commodityinsights.spglobal.com/rs/325-KYL->

[599/images/Opportunities%20and%20Challenges%20for%20Growth%20in%20Asian%20Recycled%20Polymers-Ioonlei%20Lee.pdf](#).

SEA Circular (2020). *SEA circular country profile: Cambodia*. Bangkok, Thailand: UNEP. <https://www.sea-circular.org/country/cambodia/>.

Seng, B., & Kaneko, H. (2012). *Benefit of composting application over landfill on municipal solid waste management in Phnom Penh, Cambodia*. WIT Transactions on Ecology and The Environment. <https://www.witpress.com/Secure/elibrary/papers/WM12/WM12006FU1.pdf>.

Seng, B., Fujiwara, T. & Spoann, V. (2018). *Households' knowledge, attitudes, and practices toward solid waste management in suburbs of Phnom Penh, Cambodia*. Waste Management & Research, 36(9), 905-912. <https://doi.org/10.1177/0734242X18790800>.

Simala, P. and Raksmeay, H. (2022). *Local recycler processing up to 100 tonnes a day*, 18 September. <https://www.phnompenhpost.com/national-post-depth/local-recycler-processing-100-tonnes-day>.

SME Bank of Cambodia (2024). Small and Medium Enterprise Bank of Cambodia PLC. <https://www.smebankcambodia.com.kh/>.

Soksarim, N. (2024). VIDEO: A Japanese entrepreneur transforms plastic waste into usable materials, Khmer Times, 4 July. <https://www.khmertimeskh.com/501517515/video-a-japanese-entrepreneur-transforms-plastic-waste-into-usable-materials/>.

Sustainable Development Policy Institute. (2023). *Plastic Waste Management in South Asia: Challenges and Opportunities*.

Sustainable Plastics. (2024). World Bank Issues USD100 Million Bond to Finance Plastic Recycling Projects. Retrieved from <https://www.sustainableplastics.com/news/world-bank-issues-100-million-bond-finance-plastic-recycling-projects>.

SWITCH-Asia. (2024). Only One Planet Case Study. Retrieved from https://www.switch-asia.eu/site/assets/files/4096/only_one_planet_final-1.pdf.

The Asia Foundation. (2024a, February 15). *Recycling in Cambodia: Building the Capacity of Plastic Bottle Collectors*. Retrieved from <https://asiafoundation.org/recycling-in-cambodia-building-the-capacity-of-plastic-bottle-collectors/>.

The Asia Foundation. (2024b). *Recycling in Cambodia: Building the capacity of plastic bottle collectors*. The Asia Foundation.

The Asia Foundation. (2024c). *A community approach to plastic pollution in Cambodia*. The Asia Foundation.

The Better Cambodia. (2022). *TONTOTON – A Community-Based Solution For Mismanaged Plastic In Cambodia*. Retrieved from <https://thebettercambodia.com/tontoton-a-community-based-solution-for-mismanaged-plastic-in-cambodia/>.

The Circulate Initiative. (2023). *Recovering PET waste: A force to foster Cambodia's rPET sector*. Retrieved from <https://www.thecirculateinitiative.org/blog/recovering-pet-waste-a-force-to-foster-cambodias-rpet-sector/>.

TONTOTON. (2025). *Plastic credit and community-based collection system*. Retrieved from <https://tontoton.com/projects/cambodia/>.

United Nations Centre for Regional Development (2022). *Cambodia 3R and Circular Economy Implementation*. Retrieved from https://uncrd.un.org/sites/uncrd.un.org/files/11th3r_cp_cambodia.pdf.

United Nations Development Programme (2019). *Factsheet: Status of solid waste management in Cambodia*. <https://www.undp.org/cambodia/publications/factsheet-status-solid-waste-management-cambodia>.

United Nations Development Programme (2021). *National Circular Economy Strategy and Action Plan*. Retrieved from <https://www.undp.org/sites/g/files/zskgke326/files/202206/Circular%20Economy%20Strategy%20and%20Action%20Plan%202021%20%282%29.pdf>.

United Nations Development Programme (2023). *Advancing circularity in Cambodia: Focus on plastic pollution*, 3 December. <https://climatepromise.undp.org/news-and-stories/advancing-circularity-cambodia-focus-plastic-pollution>.

United Nations Development Programme Cambodia. (2022). *Inclusive Waste Management Solutions: Supporting SME Growth and Environmental Goals*. UNDP Cambodia.

United Nations Environment Programme (2021). *From Pollution to Solution: A Global Assessment of Marine Litter and Plastic Pollution*. UNEP. <https://www.unep.org/resources/pollution-solution-global-assessment-marine-litter-and-plastic-pollution>.

United Nations Environment Programme (2022). *Turning Plastic Waste into Resources*. United Nations Environment Programme. Retrieved from <https://www.unep.org>.

United Nations Industrial Development Organization (2017). *Promoting SMEs for sustainable development and inclusive growth*. UNIDO.

United Nations Secretary-General's Advisory Board on Zero Waste (2025). *Sihanoukville's Zero Waste to Landfill Pilot Project* (Cambodia). Retrieved from https://unhabitat.org/sites/default/files/2025/02/landfill_diversion_pilot_in_sihanoukville_cambodia.pdf

Verra. (2022). *Five Things You Should Know About Plastic Credits*. Retrieved from <https://verra.org/verra-views/five-things-you-should-know-about-plastic-credits/>.

Wilson, D. C., Velis, C., & Cheeseman, C. (2006). Role of informal sector recycling in waste management in developing countries. *Habitat International*, 30(4), 797–808.

World Bank. (2022). *Plastic Waste in Southeast Asia: The Challenges and Solutions*. The World Bank Group. <https://www.worldbank.org/en/news/feature/2022/05/09/plastic-waste-in-southeast-asia-challenges-and-solutions>.

World Bank. (2023). *World Bank supports improvements to Cambodia's solid waste and plastics management*.

World Bank. (2024). *World Bank's New Outcome Bond Helps Communities Remove and Recycle Plastic Waste*. Retrieved from <https://www.worldbank.org/en/news/press-release/2024/01/24/world-bank-s-new-outcome-bond-helps-communities-remove-and-recycle-plastic-waste>.

World Economic Forum. (2022). "How empowering local communities can help solve global plastic waste." Retrieved from <https://www.weforum.org/stories/2022/01/empowering-local-communities-help-solve-global-plastic-waste/>.

World Wildlife Fund (2022). *Business Models for Recycling and Circular Economy in ASEAN: Potential and Challenges*. WWF Southeast Asia Office.

Young Eco Ambassadors (2022). *Plastic Waste Reduction Strategies: Engaging Youth and SMEs in Phnom Penh*.

8. ANNEX

Table A-1 Questionnaire for Feasibility Study on Plastic Recycling in Cambodia
(For in-person or virtual interviews to be conducted with recyclers)

Section	Question	Response Options
1. General Information	Company Name	
	Location	
	Type of Business	☐ Large-scale ☐ Medium-scale ☐ Small-scale/ Informal
	Year of Establishment	
	Number of Employees	
	Main Type of Plastic Recycled	☐ PET ☐ HDPE ☐ PVC ☐ LDPE ☐ PP ☐ PS ☐ Other: _____
2. Role of SMEs in the Plastic Recycling Market	How many SMEs are currently engaged in plastic recycling in your area?	
	What are the common business models for SME-led plastic recycling?	☐ Waste Collection ☐ Sorting & Processing ☐ Manufacturing with recycled plastics ☐ Other: _____
	What are the biggest challenges SMEs face in plastic recycling?	☐ Access to raw materials ☐ High operational costs ☐ Market demand for recycled products ☐ Limited access to financing ☐ Lack of advanced recycling technology ☐ Other: _____
	What types of plastic products do SMEs primarily recycle or produce?	☐ Pellets ☐ Sheets ☐ Finished plastic goods ☐ Other: _____
	What kind of financial and technical support is available for SMEs?	☐ Government grants ☐ Private sector funding ☐ Microfinance ☐ None ☐ Other: _____
3. Value Chain Analysis of Plastic Recycling for SMEs	What are the key stages in your plastic recycling value chain?	☐ Collection ☐ Sorting ☐ Processing ☐ Distribution ☐ Sales
	What are the primary sources of plastic waste?	☐ Households ☐ Commercial establishments ☐ Industrial waste ☐ Municipal waste collection ☐ Import from other countries ☐ Other: _____
	What challenges exist in collection, sorting, processing, and market access?	☐ Inconsistent supply ☐ Poor waste segregation ☐ Limited buyer demand ☐ High transport costs ☐ Other: _____
	How do informal workers contribute to plastic recycling?	☐ Waste picking ☐ Sorting ☐ Selling collected materials ☐ Other: _____
	How can technology improve the recycling value chain?	☐ Better sorting methods ☐ Improved efficiency ☐ Cost reduction ☐ Other: _____

Section	Question	Response Options
4. SME Business Development and Workforce Empowerment	What skills and training are required for SMEs and their workforce?	☐ Waste management techniques ☐ Recycling process knowledge ☐ Business development ☐ Financial management ☐ Other: _____
	Are there existing capacity-building programs for SMEs?	☐ Yes (Specify: _____) ☐ No
	How can women and marginalized communities be empowered through SME-led recycling?	☐ Training programs ☐ Financial support ☐ Policy incentives ☐ Other: _____
	What challenges do SMEs face in hiring and retaining skilled labor?	☐ Lack of skilled workers ☐ High turnover ☐ Insufficient wages ☐ Other: _____
	How can universities, NGOs, and government agencies support SME workforce development?	☐ Training programs ☐ Research support ☐ Technical assistance ☐ Other: _____
5. Monitoring, Evaluation, and Continuous Improvement	What KPIs should be used to track the success of plastic recycling SMEs?	☐ Volume of plastic recycled ☐ Revenue growth ☐ Market expansion ☐ Job creation ☐ Other: _____
	How do SMEs currently monitor recycling efficiency?	☐ Manual tracking ☐ Digital systems ☐ No monitoring in place ☐ Other: _____
	What feedback mechanisms support continuous improvement?	☐ Customer feedback ☐ Performance reviews ☐ Government audits ☐ Other: _____
	How frequently should performance evaluations be conducted?	☐ Monthly ☐ Quarterly ☐ Annually ☐ Other: _____
	What tools or platforms could improve SME monitoring and reporting?	☐ Data collection apps ☐ Industry dashboards ☐ Government reports ☐ Other: _____
6. Strategy and Sustainable Financing	What are the best funding options for SMEs looking to expand recycling operations?	☐ Government grants ☐ Private sector investment ☐ Microfinance ☐ Crowdfunding ☐ Other: _____
	What are the main financial challenges SMEs face in plastic recycling?	☐ High startup costs ☐ Limited investor interest ☐ Cash flow issues ☐ Other: _____
	How can impact investment and social finance be leveraged for SME recycling?	☐ Green finance ☐ ESG (Environmental, Social, and Governance) investments ☐ Plastic credits ☐ Other: _____
	What innovative financing models can support SMEs?	☐ Circular economy funds ☐ Public-private partnerships (PPPs) ☐ Other: _____
	How can SMEs establish long-term financial resilience?	☐ Diversification ☐ Technology adoption ☐ Policy advocacy ☐ Other: _____
7. Future Outlook and Recommendations	What support would help improve your recycling business?	☐ Access to better waste collection infrastructure ☐ Financial support or incentives ☐ Government policy improvements ☐ Advanced recycling technologies

Section	Question	Response Options
		☐ Awareness and training programs ☐ Other: _____
	Additional comments or recommendations	

Table A-2 Waste Collection in the City and District Centers of Cambodia in 2021

No	Province/ Municipality	Cities/ Districts (number)	Cities/ Districts with Service (number)	MSW Generation (ton/day)	MSW Collection (ton/day)	Collection Efficiency (%)	Landfill (number)	Landfill Size (ha)	Incinerator (number)
1	Banteay Meanchey	9	9	310	228	74	11	45.50	2
2	Battambang	14	11	365	234	64	14	13.20	3

N o	Province/ Municipality	Cities/ Districts (number)	Cities/ Districts with Service (number)	MSW Generati on (ton/day)	MSW Collecti on (ton/day)	Collecti on Efficienc y (%)	Landfill (numbe r)	Landfi ll Size (ha)	Incinerat or (number)
3	Kampong Cham	10	10	173	130	75	14	15.50	1
4	Kampong Chhnang	8	7	125	41	33	5	23.90	-
5	Kampong Speu	8	8	91	68	75	12	31.10	4
6	Kampong Thom	9	8	146	49	34	10	75.00	3
7	Kampong	9	8	98	77	79	8	13.10	-
8	Kandal	11	11	561	518	92	10	31.90	5
9	Koh Kong	7	4	106	106	100	2	4.30	1
10	Kratie	6	4	101	40	40	6	44.00	1
11	Mondul Kiri	5	4	20	11	55	4	25.50	2
12	Phnom Penh	14	14	3076	2830	92	1	31.00	6
13	Preah Vihear	8	3	63	31	49	5	28.50	3
14	Prey Veng	13	12	767	123	16	9	10.00	2
15	Pursat	7	7	331	301	91	11	7.50	2
16	Ratanak Kiri	9	4	87	20	23	6	16.50	-
17	Siem Reap	12	11	316	234	74	11	25.60	4
18	Preah Sihanouk	5	5	285	273	96	2	100.50	6
19	Stung Treng	6	1	65	22	34	2	101.00	-
20	Svay Rieng	8	8	381	224	59	4	4.50	1
21	Takeo	10	10	166	32	19	7	4.90	4
22	Oddar Meanchey	5	5	106	41	39	4	19.70	1
23	Kep	2	2	78	50	64	1	13.39	1
24	Pailin	2	2	53	19	36	1	5.50	-
25	Thboung Khmum	7	7	93	47	51	4	9.50	2
	Total	204	175	7963	5749	72	164	701.09	54

Source: (Pheakdey et al. 2022)

Table A-3 List of Stakeholders on Plastic Recycling in Cambodia

No.	Type of business/Name	Region/province/City	Business type
I. International agencies			
1	EMIA	Regional	Advisory firm
2	EMC	Regional	Advisory firm

No.	Type of business/Name	Region/province/City	Business type
3	OBOR Capital	Regional	Advisory firm
4	Monsoon Investments	Cambodia	Investment company
5	ADB	Cambodia	International Agency
6	World Bank	Cambodia	International Agency
7	GIZ	Cambodia	International Agency
8	UNDP	Cambodia	International Agency
9	The Asia Foundation	Cambodia	International Agency
10	Ever Wave	Cambodia	International Agency
11	GRET	Cambodia	International Agency
12	IDE	Cambodia	International Agency
13	GGGI	Cambodia	International Agency
14	KONRAD	Cambodia	International Agency
15	EuroCham	Cambodia	International Agency
16	FFI	Cambodia	International Agency
17	JICA	Cambodia	International Agency
II. Ministries			
18	MOE	Phnom Penh	Government
19	MOE	Phnom Penh	Government
20	MISTI	Phnom Penh	Government
III. NGOs/Civil Society			
21	COMPOSTED/OEEO	Phnom Penh	NGO
22	Clean River Ocean	Clean River Ocean	Clean River Ocean
23	Nisset Plastic	Nisset Plastic	Nisset Plastic
24	Think Plastic	Think Plastic	Think Plastic
25	Care for Cambodia	Care for Cambodia	Care for Cambodia
26	Farm to Table	Farm to Table	Farm to Table
27	Trash is Nice	Trash is Nice	Trash is Nice
28	everwave GmbH		
29	Impact Hub	Impact Hub	Impact Hub
30	CRDT	CRDT	CRDT
IV. Educational Institutes/Academia			
31	ITC	ITC	ITC
32	RUPP	RUPP	RUPP
33	RUA	RUA	RUA

Table A-4 SMEs in Plastic Reduce, Reuse, and Recycling in Cambodia

No.	Logo	Name	City	Type of Recyclable	Details
1.		Babel Eco-shop and Refill Station	Siem Reap	Empty, clean, plastic and glass containers with lids. All sizes and shapes.	Facebook Page
2.		Be Eco! Sustainable Shop	Phnom Penh	We collect several items and forward to worthy organizations! Hard Plastics – for Trash is Nice Clean Glass – Pay It Forward Glass Recycling Batteries – MoE Clothing and Textiles – Clothesline Resale Paper – Shredded and donated to cat shelters.	Facebook Page
3.		Care For Cambodia	Phnom Penh	Plastic Bottle Caps	Facebook Page
4.		Dogs Dinner Cambodia	Kampot	Plastic containers with lid	Facebook Page
5.		Eco-Bricks Franchisees (Across Cambodia)	Kratie, Pursat, Pailen, Battambang, Siem Reap, Kampong Speu, Takeo, Kandal, Tboung Khmum	Clean and dry plastics. List of items they can accept are PET, HDPE, LDPE, PP, and PS.	
6.		Eco-Bricks គម្រោង	Phnom Penh	All types of CLEAN, soft plastics that are PET, HDPE, LDPE, PP, and PS. Plastic is shredded and incorporated into pressed (no wood/heat) bricks that are stronger than traditional bricks and easy to assemble.	Facebook Page

No.	Logo	Name	City	Type of Recyclable	Details
7.		Farm to Table	Phnom Penh	Batteries, Glass, Clean Soft Plastics (goes to Eco Bricks)	Facebook Page
8.		Gateway to Khmer	Phnom Penh	Batteries, Pay It Forward Glass Recycling, Plastics (all types), Styrofoam, paper, tp rolls. The public is welcome to come to collect any of these items if they could reuse.	Facebook Page
9.		Heartprint	Siem Reap	Glass jars (with lids), toilet paper rolls (or any cardboard tube), plastic cutlery (unused, clean), Styrofoam trays, clothing, towels and sheets (old but clean), egg containers, plastic take-away containers (clean)	Facebook Page
10.		IWA KEP	Kep	Cement bags, Rice bags, plastic bags	Facebook Page
11.		Khraft Cambodia	Phnom Penh	Paper rolls, cardboard, magazines, wine corks, clear plastic containers.	Facebook Page
12.		Seekers	Phnom Penh	Batteries, glass and soft plastics. Accepts the own packaging back for reuse (USD 1.00 credit against next purchase). Also accepts Singa soda bottles and unbranded brown beer bottles (i.e. no embossed logo on the bottle).	Facebook Page

No.	Logo	Name	City	Type of Recyclable	Details
13.		The Earth Home Cambodia	Phnom Penh	Plastic bottles - Vital 500ml	Facebook Page
14.		Trash is Nice	Phnom Penh	Hard plastics - LDPE, HDPE, PP and PS (recycling symbols 2, 4, 5 and 6). Includes straws, food containers, shampoo bottles, milk and juice bottles etc. Trash is Nice is your local recycling station. By using the concept proposed by the international Precious Plastic community, we are collecting and recycling plastic waste. We are aiming to spread and raise awareness about plastic pollution and how we can transform waste into valuable objects and materials.	Facebook Page

(Compiled from Eco-Business Cambodia (2025))