



05 July 2025

Report: Project Completion Meeting: Feasibility Study on Plastic Recycling Towards a Circular Future in Cambodia

Session 1: Opening

The session began with welcoming remarks from Mr. Shunichi Honda (UNEP), who highlighted the significance of the project and expressed appreciation to all participants, both in person and online. He acknowledged the Government of Japan for funding the feasibility study and explained that the aim of the meeting was to share the results of the study and explore practical ways forward for SME (small and medium-sized enterprises)-led plastic recycling in Cambodia. He emphasized the urgency of addressing plastic pollution and the importance of strengthening scientific and policy-based approaches to support SMEs in recycling activities.

Mr. Hiroki Sawamura from the Ministry of Foreign Affairs of Japan followed with opening remarks on behalf of the Japanese government. He reiterated Japan's strong commitment to ending plastic pollution, referencing key national policies such as the Plastic Resource Circulation Act and international initiatives like the Osaka Blue Ocean Vision. Mr. Sawamura emphasized that the focus on SMEs in this project is especially relevant for many countries and that Japan values continued partnerships to support sustainable waste management in Cambodia.

Mr. Premakumara, representing the IGES Centre Collaborating with UNEP on Environmental Technologies (IGES-CCET), welcomed participants and emphasized the importance of recognizing the roles of both formal and informal sectors in plastic recycling in Cambodia. He noted that the feasibility study revealed a strong linkage between these two sectors and advocated for inclusive discussions throughout the two-day workshop to explore how both can work together more effectively.

The final speaker was Mr. Nugget Ball, Deputy Director of the Department of Solid Waste Management, Ministry of Environment, Cambodia. Through interpretation, he expressed Cambodia's ongoing commitment to improving solid waste and plastic management, highlighting recent campaigns to reduce single-use plastics and enhance public awareness. He underscored the importance of stakeholder collaboration and government leadership to support circular economy initiatives in the country.

The session concluded with thanks to all speakers and participants, setting a positive and inclusive tone for the technical sessions to follow.

Session 2: Project Implementation and Overview

Session 2 of the Project Completion Meeting provided a comprehensive overview of the objectives, rationale, and implementation process of the Feasibility Study on Plastic Recycling Towards a Circular Future in Cambodia. The session was opened by Mr. Shunichi Honda from UNEP, who set the stage by contextualizing the global and local relevance of plastic waste recycling. He noted that while plastic pollution has become a critical environmental issue globally, it also presents a potential opportunity—particularly for SMEs in developing countries like Cambodia—to engage in sustainable and economically viable recycling practices.

Mr. Honda explained that the study was designed to assess how SME-led plastic recycling can be expanded and institutionalized in Cambodia as a meaningful response to the plastic pollution crisis.

The study aimed to go beyond just documenting the problem; it sought to identify scalable business models and environmentally sound recycling technologies that could support the country's transition toward a circular economy. He emphasized that the project's ambition was not only to examine technical feasibility but also to understand market dynamics, stakeholder engagement, and policy conditions that shape recycling behaviour at the local level.

The study had multiple core components: an analysis of the economic and operational feasibility of recycling by SMEs and informal actors; a detailed market and stakeholder landscape assessment; the development of replicable business models tailored to Cambodia's conditions; and a Life Cycle Assessment (LCA) of recycling technologies to evaluate their environmental impacts. In addition, the study offered policy and investment recommendations to guide future strategies and attract both public and private sector support.

Following Mr. Honda's presentation, Mr. Rithy Uch from COMPOSTED shared findings from the field, focusing on the current state of plastic recycling in Cambodia. He pointed out that while there are active SMEs engaged in collection, sorting, and processing of plastic waste, these businesses face several critical challenges. These include high operational costs, limited access to advanced recycling technologies, weak enforcement of environmental regulations, and lack of financing mechanisms. Moreover, market access remains limited due to inconsistencies in supply and the need for cleaner input material, which is difficult to secure in the absence of household-level segregation.

Professor Chettiyappan Visvanathan then provided a synthesis of the study's findings on the plastic value chain in Cambodia, breaking it down into three stages: production, consumption, and post-consumption (collection, recycling, and disposal). He explained that while the production and import of plastic products in Cambodia is fairly regulated and formalized, significant challenges emerge in the post-consumption stage. Most plastic waste—particularly single-use plastics—either escapes collection or is poorly sorted, making it unsuitable for efficient recycling. Informal waste collectors play a critical role, but their efforts remain largely unsupported and unrecognized within formal waste management frameworks.

Professor Visvanathan presented a range of business model options tailored for SMEs in Cambodia. These included collection-based models that leverage partnerships with the informal sector; process-based models such as decentralized sorting facilities; and sales-based models involving value-added production or export. He emphasized that the feasibility of these models depends on factors such as access to raw material, processing capacity, and market demand for recycled products. He also discussed the role of public-private partnerships, plastic credit schemes, and environmental monetization strategies as complementary tools to make recycling ventures more viable.

In his concluding remarks, Professor Visvanathan stressed the need for a supportive regulatory and financial ecosystem. Recommendations included strengthening enforcement of Extended Producer Responsibility (EPR), introducing certification systems for recycled products, improving access to affordable finance for SMEs, and formalizing the informal sector in ways that ensure environmental compliance and social protection. He also underscored the importance of increasing public awareness and investing in education and behaviour change to support upstream waste segregation.

The session concluded with an interactive discussion, where participants raised questions on data reliability, methodology, and demand for recycled plastic. Stakeholders expressed interest in accessing the draft report and emphasized the need for stronger coordination between government, recyclers, and development partners to drive systemic change in the plastic recycling sector.

Session 3: Pathways for Scaling Up SME-led Plastic Recycling

Session 3 of the Project Completion Meeting focused on exploring practical strategies to scale up plastic recycling in Cambodia through the engagement of SMEs. The session was opened by Mr. Shunichi Honda (UNEP), who framed the discussion around the need to recognize SMEs not only as service providers in waste management, but also as important economic actors in the transition to a circular economy. He emphasized that plastic recycling should be viewed as a business opportunity—particularly in low- and middle-income countries—where economic development and growing local entrepreneurship offer fertile ground for expanding recycling initiatives.

The session featured a panel discussion with representatives from COMPOSTED, IGES-CCET, and SME operators actively working in Cambodia's plastic recycling sector. The panellists began by identifying the key barriers that SMEs face in operating and expanding their recycling activities. One of the main challenges highlighted was the lack of waste segregation at the source, which results in mixed and contaminated plastic waste. This increases operational costs, as additional labour, water, and electricity are needed to clean the plastic before it can be recycled. In particular, electricity prices in Cambodia were noted to be high relative to neighbouring countries, adding further strain to recycling businesses.

Participants also emphasized the limited access to appropriate and efficient recycling technology. Many SMEs operate with basic, often locally fabricated machinery that is energy-intensive and contributes to environmental pollution. Licensing procedures for export markets were also mentioned as overly complex and slow, further hindering the competitiveness of SMEs. Another major constraint is the lack of domestic market demand for recycled plastic products, which forces many enterprises to rely on exports—despite the regulatory hurdles and limited access to external buyers.

Despite these constraints, several opportunities for scaling up were discussed. Stakeholders pointed to emerging market demand, particularly in international markets, as well as growing interest from Cambodian municipalities and civil society in supporting recycling. Opportunities also exist in integrating informal workers—who play a vital role in collecting and sorting recyclables—into more structured SME operations. Improved collaboration among waste collectors, recyclers, municipalities, and development partners was seen as key to strengthening the recycling value chain and supporting SMEs in scaling up their operations sustainably.

Mr. Lakshitha Paranagamage (IGES-CCET) reflected on policy-level enablers, stressing the importance of creating a more favourable market environment for recycled plastics. He pointed out that, in many countries, virgin plastic remains cheaper than recycled plastic due to a lack of financial and regulatory incentives. To address this imbalance, he proposed mechanisms such as import taxes on virgin plastics or subsidies for recycled materials. He also stressed the need for a national framework on waste segregation to ensure uniform practices and efficient collection systems. Furthermore, he emphasized the importance of a structured pathway for integrating the informal sector, ensuring that informal workers are not marginalized but included in formal business models or partnerships.

Representatives from local authorities and SMEs echoed the importance of enabling conditions. Some suggested using tipping fee revenue to directly support recyclers or establishing preferential purchasing mechanisms for recycled products. Others expressed a desire to access international markets and technical expertise. One entrepreneur requested support for training and exchange visits to countries like Japan to learn about advanced recycling technologies as in details below:

Mr. Juergen, MOE's Technical Adviser: Inquired about the color coding system used for waste separation in Japan?

Mr. Lakshitha, IGES: Responded that in Sri Lanka, there are three color codes: orange for plastic, black for mixed waste, and green for organic waste. However, in Japan, there is no standardized color coding; instead, transparent bags are commonly utilized to allow visibility of the contents.

Mr. Noy Chek, Battambang City Hall: Provided insights on the waste management practices in Battambang Municipality, where payment is structured at \$20 per ton for waste collection and landfill treatment—comprising \$17 per ton for the waste collection company and \$3 per ton for landfill operations. He emphasized the importance of the recycling sector collaborating closely with major sources of plastic waste to facilitate recycling prior to materials being handed over to waste collection companies. Furthermore, he encouraged stakeholders not to wait for support from the relevant ministry but to proactively seek and implement effective solutions, acknowledging the lengthy processes involved.

Mr. Honda, UNEP: Mentioned that Japan does not employ a color coding system due to the categorization of waste into 15 distinct types. Instead, labeling is utilized to indicate each category.

Mr. Rithy, COMPOSTED: Shared insights regarding waste management practices in Japan, highlighting that approximately 15% to 20% of waste generated is organic, which is routinely incinerated.

Mr. Nget Bol, MOE: Recalled that in 2013, Phnom Penh implemented a waste separation system with two categories: green bins for wet waste and dark yellow bins for dry waste. However, this initiative was short-lived as waste collection companies failed to transport the waste separately.

Mrs. Nop Chenda (Recycling Company): Requested support from the Ministry of Environment (MoE) for processing documentation that would enable her company to access international markets. Additionally, she expressed a desire to visit Japan under a project that would allow her to learn from small and medium-sized enterprises (SMEs) in Japan, with the objective of adapting and sharing these practices in Cambodia.

The discussion concluded with broad agreement on the need to strengthen coordination among stakeholders, streamline regulatory procedures, invest in infrastructure and training, and improve access to finance. Participants affirmed that with the right support mechanisms in place, SME-led plastic recycling could significantly contribute to Cambodia's circular economy goals, create jobs, and reduce the environmental burden of unmanaged plastic waste.

Session 4: Life Cycle Assessment (LCA) of Plastic Recycling Technologies

Session 4 provided a deep dive into the Life Cycle Assessment (LCA) component of the feasibility study and expanded the conversation to include its relevance in policymaking. The session was led by Mr. Matthew Burke and Ms. Archana Datta, who jointly presented both the findings from the LCA conducted in Cambodia and the broader application of LCA as a tool for evidence-based policy development.

Mr. Burke began by introducing the LCA methodology, describing it as a scientific and internationally standardized tool used to quantify the environmental impacts of products, services, or systems throughout their entire life cycle—from resource extraction to end-of-life disposal or recycling. In the context of the Cambodia feasibility study, LCA was applied to compare the environmental performance of various plastic waste treatment scenarios, including landfilling, incineration with energy recovery, RDF (refuse-derived fuel), mechanical recycling (both low- and high-technology), and closed-loop PET systems.

The results of the LCA demonstrated that recycling—particularly mechanical recycling using high-technology systems—offered the most significant environmental benefits across impact categories such as climate change, human health, fossil energy use, and ecosystem quality. Even low-tech recycling, often carried out by SMEs in Cambodia, showed potential for sustainability when plastic inputs were clean and operations were efficient. However, it was noted that some environmental trade-offs and data limitations still exist, and context-specific decision-making remains important.

Building on these results, Ms. Archana Datta presented a policy-focused segment titled “A Policymakers’ Guide to Life Cycle Assessment.” She explained that the UNEP-hosted Life Cycle Initiative promotes the integration of life-cycle thinking into high-impact sectors, including waste management, to support countries in achieving sustainability goals. She argued that LCA is not only a technical tool but also a critical resource for policymaking, as it helps identify environmental “hotspots,” assess trade-offs, and compare policy options on a fair and science-based basis.

Ms. Datta emphasized that for LCA to effectively inform policy, certain principles must be met. These include adherence to recognized standards (such as ISO 14040 and 14044), alignment of the LCA goal and scope with the intended policy context, comprehensiveness of impact categories and life-cycle stages, and transparency through independent review. She also cautioned against common pitfalls, such as using incomplete or oversimplified LCAs that focus only on a single indicator (e.g., carbon footprint) or omit crucial life-cycle stages. Policymakers, she noted, must be able to assess whether an LCA study is robust, relevant, and well-documented before using it as a basis for regulation or strategy.

The session closed with a reflection on how Cambodia can leverage the LCA findings from the feasibility study to support informed policy development, technology selection, and investment prioritization. By embedding life-cycle thinking into its national waste management and circular economy policies, Cambodia can ensure that future decisions are not only economically viable but also environmentally sound.

Session 5: Closing and Way Forward

Session 5 marked the conclusion of the first day of the Project Completion Meeting on the Feasibility Study for Plastic Recycling Towards a Circular Future in Cambodia. Mr. Shunichi Honda from UNEP opened the session by thanking all participants for their active engagement throughout the day. He highlighted that the discussions held during the previous sessions had provided a comprehensive overview of the current status of plastic waste recycling in Cambodia, including both opportunities and challenges. Mr. Honda reminded participants that the draft feasibility study report was available for review and welcomed feedback, particularly suggestions for how to better engage SMEs in plastic recycling. He encouraged stakeholders to share their comments and ideas by the end of the month to help strengthen the study’s conclusions and inform the next steps.

Looking ahead, Mr. Honda emphasized the importance of developing pathways for scaling up SME involvement in recycling, while also preparing for future policy shifts such as the anticipated entry into force of a new international convention on plastic pollution. He also acknowledged the significant role played by the informal sector in Cambodia’s waste management landscape. While some experts support the formalization of informal actors through regulatory and institutional mechanisms, Mr. Honda pointed out that formalization is not the only path forward. Even if informal actors are not officially integrated, their contributions are essential and should be supported as part of a diverse and inclusive waste management system. He expressed his hope that municipalities

and national authorities in Cambodia will continue to cultivate enabling conditions for public-private collaboration, which includes both formal and informal stakeholders.

Reflecting on LCA session held earlier in the afternoon, Mr. Honda noted the value of using life-cycle data to guide recycling policy and investment decisions. He encouraged participants to consult the LCA findings in the draft report and consider how such evidence-based approaches can be used to improve the environmental and economic performance of SME recycling operations. He reiterated UNEP's commitment to continuing collaboration with Cambodian stakeholders, particularly in helping to establish a forward-looking strategy that includes informal actors, strengthens institutional frameworks, and maximizes the resource recovery potential of plastic waste.

Mr. Phalla Sam from COMPOSTED also shared his reflections, summarizing the key themes discussed during the day. He noted that the day's focus had largely been on the formal sector, while the second day would give greater attention to the informal sector and include more participation from recyclers and community-level actors. He acknowledged the contributions of various experts and institutions and highlighted that tomorrow's discussions would help shape the project's next steps, particularly around capacity building and implementation planning. He also noted that the second day would not include online participation, which would help avoid the technical challenges experienced during Day One.

In closing, the session ended with expressions of gratitude to all participants for their contributions and a shared commitment to continue the dialogue. There was a clear sense of momentum and readiness among stakeholders to move from study findings to practical actions that can support the growth of Cambodia's recycling sector and its transition to a circular economy. Both UNEP and COMPOSTED reiterated their intention to work closely with national and local actors to implement the study's recommendations and foster inclusive, sustainable solutions to plastic waste challenges.

Outcomes of the Project Completion Meeting

The Project Completion Meeting held on 25 March 2025 in Cambodia marked a key milestone in concluding the feasibility study on plastic recycling led by SMEs. The meeting successfully brought together representatives from national and local government, international organizations, SMEs, academia, and development partners to review the study findings and discuss practical steps toward a circular economy for plastic waste in Cambodia. Several important outcomes emerged from the sessions and discussions:

First, the meeting provided a platform to validate the key findings of the feasibility study, which included detailed analysis of the current state of plastic waste management, the roles of SMEs, market and policy barriers, viable business models, and environmental assessments through LCA. Participants confirmed that the study accurately reflects the Cambodian context and offers practical recommendations.

Second, there was strong recognition of the critical role that SMEs play in Cambodia's recycling ecosystem, particularly in collecting, sorting, and processing plastic waste. Discussions highlighted the need to improve enabling conditions for SMEs, including better access to finance, technology, market linkages, and policy support. Participants also acknowledged the value of informal actors and the need to develop inclusive approaches that bring them into the wider recycling value chain without disrupting their livelihoods.

Third, the results of the Life Cycle Assessment (LCA) confirmed that recycling—especially high-tech mechanical recycling—is the most environmentally sustainable option, while even low-tech SME practices offer benefits when input quality is improved. The meeting emphasized LCA's

value not only for comparing technologies but also as a policy and investment tool. By integrating life-cycle thinking into national strategies, Cambodia can support evidence-based decisions aligned with international standards.

Fourth, the meeting generated consensus around the importance of improving waste segregation at the source as a prerequisite for enhancing recycling efficiency and material quality. Participants agreed that stronger awareness, education, and community engagement are essential to support behavioural change at the household and institutional levels.

Finally, the meeting produced a shared commitment to developing a practical roadmap for scaling up SME-led plastic recycling in Cambodia. Participants expressed readiness to engage in policy dialogue, technical cooperation, and pilot projects that address the study's key recommendations. UNEP, IGES-CCET, and COMPOSTED reiterated their commitment to continue supporting national stakeholders in translating the study into action.

The meeting concluded with a call to maintain momentum and ensure that the outcomes inform not only national strategies, but also regional collaboration and global commitments related to plastic pollution, sustainable resource management, and circular economy transitions.

List of Participants:

The project completion meeting on March 25, 2025, demonstrated strong collaboration, with 34 participants from various sectors. The Ministry of Environment (MOE) contributed three male representatives, reaffirming their commitment. Battambang Municipality Administration and Academia each had one participant, ensuring local governance and academic perspectives. Development Partners and NGOs played a key role with 18 attendees (8 males, 10 females), reflecting gender balance and diverse viewpoints. The Waste Collection Company and Plastic Recycling Company contributed three and six participants, respectively, promoting inclusivity. Additionally, two representatives from other sectors highlighted broad interest in the project's outcomes. This diverse participation underscores a shared commitment to achieving project goals and advancing sustainable environmental practices.

Name	Gender	Position	Institution
Noy Chek	M	Deputy Office Chief	BTB Municipality Hala
Khen Viseth	M	Technical Officer	CAES-FOE-RUA (University)
Nep Chenda	F	CEO	Chenda Khmer Plastic Recycling Company
Bin Sokreth	F	Admin Manager	Chenda Khmer Plastic Recycling Company
Neam Oudom	M	Deputy Chief-OP	Cintri Waste Collection Company
Sean Bophaphal	F	Deputy Director	COMPOSTED
Sam Phalla	M	Director	COMPOSTED
Uch Sopheary	F	Admin	COMPOSTED
Son Sreypich	F	Volunteer	COMPOSTED
Uch Rithy	M	Deputy Director	COMPOSTED
Ben Visnow	M	Interpreter	Freeland
Ung Singly	M	Interpreter	Freeland
Ankit Bhatt	M	Program Lead	GGGI
Kong Daren	F	Advisor	GIZ
Neou Raksmeay	F	Advisor	GIZ
Florian Schmidt	M	Advisor	GIZ
Va Phavan	F	Communication	GOMI Recycle
Beak Sophy	F	Advisor	GP (GIZ)
Soy Bunnath	M	MERL Officer	IDE
Lakshitha PARANAGAMAGE	M	Program coordinator	IGES
Premakumara Jagath Dickella Gamaralalage	M	Director	IGES

Name	Gender	Position	Institution
Un Bunphoeun	M	National Project Coordinator	ILO
Sean Moug Ing	F	Program Officer	KAS
Im Ponhavotey	F	Junior Research	KAS
Bunthoeun Sreykun	F	Junior Research	KAS
Pich Sotha	M	General Manager	Lim Vanny Plastic Recycling Company
Kouy Lyheng	M	Assistant	Lim Vanny Plastic Recycling Company
Hiroki Sawamura	M	Deputy Director	Ministry of Foreign Affairs, Japan
Chhung Ouy Lang	F	Operation Manager	Mizuda Waste Collection Company
Va Chinda	F	Assistant to CEO	Mizuda Waste Collection Company
Juergen Staeudel	M	Advisor SWM	MOE
Kheang Sunltheng	M	Deputy Office Chief	MOE
Nget Bol	M	Deputy Director	MOE
Rotha Sopanha	F	Program Assistant	TAF
Leom Chou say	F	Program Manager	TONTOTON
Nac Mi	M	Specialist	UNDP
Matthew Burke	M	Consultant	UNEP
Archana Datt	F	Associate Programme Management Officer	UNEP
Shunichi Honda	M	Programme Management Officer	UNEP

List of Photo Documentation















