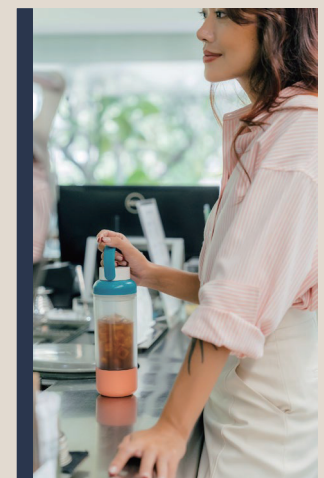
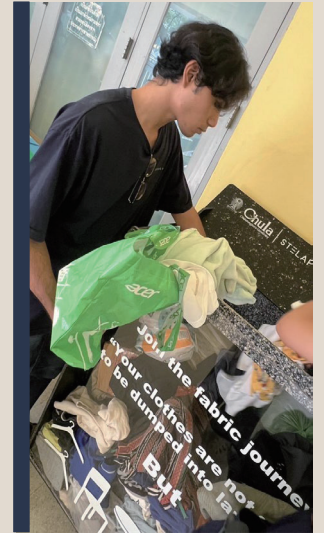


# BREAKING THE PLASTIC HABIT IN ASEAN

Behaviour-centred interventions for lasting plastic reduction



Evidence from Phase II pilot initiatives in six ASEAN countries

# Breaking the Plastic Habit in ASEAN: Behaviour-Centred Interventions for Lasting Plastic Reduction

## Evidence from Phase II pilot initiatives in six ASEAN countries

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### Authors:

Institute for Global Environmental Strategies (IGES) - Dwayne Appleby, Alice Marie Yamabe-Ledoux, Atsushi Watabe

### Implementing Partners:

Centre for Southeast Asian Studies (CSEAS), Indonesia - Arisman, Jihan Khairun Amala, Nirmala Fitriyana  
University of the Philippines Diliman (UPD), Philippines - Brida Lea Diola, Noriza Tibon Sadie  
Chulalongkorn University, Thailand - Kwanmanas Meethavorn  
Ministry of Environment, Cambodia - Ros Bandos  
Econox, Lao PDR - Valy Phommachak, Phai Akone Sakountava  
Nopa, Viet Nam - Pierre Rault

### Contributors:

Rare Center for Behavior & the Environment - Shiyang Li, Meg Serranilla

### Supervision and coordination:

Regional Knowledge Centre for Marine Plastic Debris (RKC-MPD), Economic Research Institute for ASEAN and East Asia (ERIA) - Ayako Mizuno, Reo Kawamura, Elsa Noviani

### Layout and cover design:

Institute for Global Environmental Strategies (IGES) - Masato Aoki

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## Executive Summary

The plastic pollution crisis is particularly urgent in the Southeast Asian region, where rapid urbanisation and growing consumption are driving a surge in plastic waste generation. ASEAN countries are increasingly implementing policy instruments to address plastic pollution, including single-use plastic bans, extended producer responsibility (EPR) schemes, and public awareness campaigns. Yet these measures alone have often proven insufficient to shift deeply embedded consumption habits.

Behavioural Science offers complementary approaches to address this gap. By incorporating a behaviour-centred approach, interventions can bring about a sustainable change in behaviour. By moving beyond the traditional reliance solely on information campaigns or financial incentives, these approaches help bridge the “intention–action gap,” where high environmental awareness does not necessarily translate into sustainable behaviour.

Phase II of *Breaking the Plastic Habit in ASEAN* piloted behaviour-centered interventions in six ASEAN countries: Cambodia, Indonesia, Lao PDR, the Philippines, Thailand, and Viet Nam. The pilots demonstrated measurable shifts in plastic consumption and waste management practices by combining multiple behavioural levers: choice architecture, social influence, emotional appeals, material incentives, and regulations. A key innovation of Phase II was the application of a psychosocial Monitoring and Evaluation framework, which shifted implementers’ focus from tracking activities to understanding the psychological and social drivers that shape behaviour change.

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## Key cross-cutting insights

### **Embed behaviour change in locally meaningful values**

Interventions were most effective when plastic reduction was framed through culturally and socially relevant narratives rather than purely environmental messaging. Linking behaviour change to identity, values, and social belonging, such as religious principles or lifestyle branding, proved highly effective.

### **Make sustainable choices easy by reducing friction**

Interventions that redesigned the decision environment to make the sustainable choice the default option, such as making plastic straws available only upon request, produced immediate behavioural shifts. Conversely, when sustainable practices required additional effort, such as carrying or cleaning reusable containers, adoption declined despite high environmental awareness.

### **Balance rigour and feasibility in monitoring and evaluation**

While tracking the psychosocial drivers of behaviour is crucial, M&E frameworks must balance rigour with real-world feasibility. Implementers should prioritise a core set of realistically measurable metrics rather than force-fitting a high volume of indicators that overburden staff in fast-paced environments. Simplified indicators and continuous qualitative feedback, through reflection journals and regular check-ins, can support adaptive learning without overburdening implementers.

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## Key lessons for project implementers and businesses

### **Empower target groups to leverage social influence**

Peer-to-peer influence often drives adoption more powerfully than top-down rules and messaging. By equipping target groups with the right motivation and capacity, they can become influential advocates who naturally reinforce sustainable social norms within their own communities.

### **Engage the wider social system**

Successful behaviour change interventions involved multiple actors, including households, frontline workers, businesses, and institutions. Behaviour change efforts targeting individuals alone often had limited impact unless supported by wider social networks and organisational structures.

### **Engage core actors early and sustain communication**

Early engagement of key actors helped tailor interventions to local realities, foster shared ownership, and close communication gaps. In several pilots, frontline workers emerged as critical champions once they understood the objectives and incentives, highlighting the importance of clear communication, training, and continuous onboarding especially in contexts with high staff turnover.

## Key lessons for policymakers

### **Enforcement is critical to policy effectiveness.**

Several pilots revealed a gap between existing regulations and their enforcement. In some locations, plastic bans remained largely unenforced, leaving compliance dependent on the goodwill of businesses and individuals. Without visible and credible enforcement and coordination across governance levels, businesses and households perceived that the burden of sustainability falls unfairly onto them without institutional support. Policies and incentives also failed when operational actors were unaware of their roles or potential benefits, highlighting the need for clear communication and training.

### **Establish clear regulatory standards and level the economic playing field for reuse systems**

Governments should provide clear guidance on hygiene standards, operational requirements, and certification for reusable products to support businesses transitioning toward circular systems. Additionally, governments should level the economic playing field by providing appropriate financial incentives to support circular business models while actively phasing out single-use items, as local reuse services struggle to compete with ultra-cheap, single-use disposables.

### **Develop an enabling infrastructure**

Policies promoting reuse and waste reduction must be supported by enabling physical infrastructure, including washing stations, accessible recycling systems, and viable alternatives to single-use plastics. Without these enabling conditions, behavioural interventions and regulatory measures are unlikely to achieve lasting impact.



# Part I



## The Case for a Behaviour-Centred Approach for Tackling the Plastic Pollution Crisis

This section introduces the ASEAN regional plastic pollution challenge and outlines why behavioural insights are essential to complement traditional policy instruments. It presents a brief theoretical foundation for Behavioural Science and how it can be applied to concrete interventions that shift plastic consumption patterns durably.

# 1. The plastic pollution crisis in global and ASEAN Contexts

## The global plastic pollution crisis

Plastic waste has become a mounting threat to human and planetary health. Globally, plastic production has more than doubled since the early 2000s, and the world now generates over 400 million tonnes of plastic waste each year (United Nations Environment Programme 2023). The vast majority is burned, landfilled, or leaks into terrestrial and marine ecosystems.

Almost two-thirds of all plastic waste originates from products with lifespans of less than five years, many of which are designed for single use, including packaging (40%), consumer products (12%), and textiles (11%) (OECD 2022).

The environmental consequences are vast. Leaked plastics degrade into micro- and nanoplastics that harm wildlife and contaminate food chains, and increasingly appear in soil, water, and the human body. At the same time, plastic production and incineration processes release greenhouse gases that exacerbate climate change (OECD 2025). Health risks are increasingly evident, especially for vulnerable populations such as waste pickers and informal sector workers who are disproportionately exposed to unmanaged waste (Plastic Atlas 2019).

## Major impacts in the Southeast Asian region

The plastic pollution crisis is particularly urgent in the Southeast Asian region, where rapid urbanisation and growing consumption are driving a surge in plastic waste generation. In ASEAN countries such as Indonesia, Viet Nam, and the Philippines, plastic waste is projected to nearly quadruple (from 7.5 million tonnes to 28 million tonnes in 2050) (OECD 2025). This growth is outpacing the development of adequate waste management infrastructure, resulting in significant plastic leakage into waterways and oceans (Meijer et al. 2021). This challenge is intensified by the region's geographical and climatic characteristics. Extensive coastlines, densely populated coastal cities, and their proximity to major river systems enable mismanaged plastic waste to rapidly reach rivers and marine environments, while high rainfall and frequent extreme weather events accelerate its dispersal (OECD 2025).

Paradoxically, the countries most responsible for plastic leakage are also among the most vulnerable to its impacts. Southeast Asia's coastal and riverine ecosystems underpin critical livelihoods and economic sectors, including fisheries, tourism, and agriculture, and the region is a global biodiversity hotspot, home to extensive mangrove forests and coral reef systems (OECD 2025). The economic costs of plastic pollution are already substantial, with marine-related damages in the Asia-Pacific region estimated at USD 10.8 billion annually (McIlgorm et al. 2022).

## The need for global and regional coordinated actions

Addressing this challenge requires concerted efforts from governments, the business community, civil society, and international partners. At the global level, negotiations are underway for an international legally-binding treaty on plastic pollution. Yet, as these negotiations face delays and diverging priorities, local and national actions have become more critical (Cowan et al. 2025; Worth 2025).

At the regional level, ASEAN has adopted a strategy towards a more circular economy for plastics, and many member states have developed national action plans (ASEAN Secretariat 2021). These typically include regulatory instruments such as bans or levies on selected single-use plastic items (e.g. straws, bags, stirrers), the introduction of extended producer responsibility (EPR) schemes, and investments in domestic recycling capacity to reduce reliance on waste exports and improve local waste management infrastructure. Regional and national efforts have also prioritised public awareness, education, and outreach campaigns to promote behavioural change (Spranz and Kobbe 2023).

While these measures represent important progress, a persistent challenge remains: achieving durable behaviour change among consumers, households, and businesses. Regulatory signals and information campaigns alone have often proven insufficient to shift deeply embedded consumption habits. This highlights the need for complementary behavioural approaches that address the everyday decision-making contexts in which plastic use occurs.

Initiatives at the ground level, led by local governments, educational institutions, businesses and community actors, can play a critical role in piloting innovative and scalable solutions to reduce plastic consumption. These actions can then be instrumental to generate evidence to inform national and global waste reduction policy frameworks to adopt a more integrated and behaviour-centred approach.

## 2. Leveraging the science of change: a theoretical foundation

### Behavioural science and behavioural insights

**Behavioural science** is an interdisciplinary field of research drawing from psychology, behavioural economics, neuroscience, and sociology that seeks to understand how people make decisions in real-world contexts. Unlike traditional policy approaches that assume individuals are rational actors who will change behaviour when provided with information, regulations, or price signals alone, behavioural science recognises that everyday decisions are influenced by habits, social norms, cognitive biases, emotions, convenience, and contextual cues.

**Behavioural insights** translate this evidence into practice by applying lessons from behavioural science to design, test, and refine interventions and policies that better align with real-world behaviours rather than idealised rational models.

In practice, interventions informed by behavioural insights make use of several levers to effect behaviour change. Rare's Center for Behavior & the Environment identifies six levers of behaviour change, each grounded in evidence from behavioural science (Rare Center for Behavior & the Environment, n.d.). These levers are most effective when combined and tailored to specific contexts and target groups.

## Six levers of behaviour change

### Rules and regulations

Rules and regulations establish formal boundaries for acceptable behaviour and can signal social expectations when consistently enforced. They include bans, mandates, standards, or institutional policies. While regulations alone do not guarantee compliance, they are most effective when combined with other levers that improve feasibility, acceptance, and legitimacy.

### Material incentives

Material incentives influence behaviour by changing the perceived costs and benefits of an action, such as through discounts, fees, or rewards. These incentives can be powerful for some groups, particularly when directly linked to livelihoods, but their effectiveness varies depending on target groups' motivation profiles and the level of inconvenience involved.

### Information

Information interventions aim to raise awareness, build understanding, and improve decision-making by providing guidance, instructions, or environmental knowledge. When combined with other levers, they play a critical supporting role by strengthening understanding, legitimacy, and behavioural capability.

The three levers above reflect traditional policy tools often rooted in rational choice assumptions. Behavioural science, however, acknowledges the limits to humans' rationality and shows that these traditional approaches are rarely sufficient on their own to effect durable change. The three levers below integrate a fuller understanding of the factors motivating decision-making and behaviour change: how people feel, what they perceive others are doing, and how choices are presented.

### Emotional appeals

People are often motivated by strong emotions such as pride, hope, fear, anger, and shame. Emotional appeals recognise that many of the decisions we make are often driven by how we feel about a potential action, or how it connects to personal concerns and self-interest. Behaviour change interventions can be designed to speak to these emotional levers. Effective emotional appeals require a deep understanding of the target audience and context.

### Social influences

Social influences leverage the fact that people are strongly affected by what others do and approve of. Interventions use peer modelling, public commitments, group challenges, and visible participation to normalise sustainable practices. Interventions can also seek to shift the perception of what the norm is, by reframing messaging away from current norms towards normalising a desirable behaviour, by emphasising that it is becoming more common.



Levers of Behaviour Change Framework (Rare, 2020)

## Choice architecture

Choice architecture refers to the design of the decision-making environment in which choices are presented. Small contextual changes, such as setting defaults, hiding undesirable options, simplifying decisions, or providing timely prompts, can naturally divert away from undesirable habits, without restricting freedom of choice.

Together, these behavioural levers illustrate that behaviour change is not about persuading individuals in isolation, but about redesigning systems to support sustainable choices. Behavioural science shows that deep and durable behaviour change rarely results from a single lever. Instead, the most effective interventions combine regulatory and economic tools with social, emotional, and contextual levers. When strategically combined in tailored interventions, these behavioural levers can become powerful tools for promoting sustainable consumption and a reduction in plastic consumption.

# 3. The role of behavioural insights in tackling plastic pollution

The behavioural sciences play a crucial role in tackling plastic pollution by diagnosing why the general public often fails to translate high awareness of an environmental problem into action, known as the "intention-action gap". This framework moves beyond the traditional overreliance on information campaigns or financial incentives, which are often found to be insufficient or yield negligible effects when used in isolation.

Behavioural analyses (Bujold and Williamson 2025) confirm that individual actions regarding plastic consumption and disposal are profoundly influenced by psychological, social, and contextual factors, such as strong habits and convenience. Effective solutions must therefore holistically address the determinants of behaviour: capability (e.g., knowledge, experience, confidence), opportunity (physical and social environment), and motivation (reflective thoughts and automatic responses like habits or emotions).

The field of applied behavioural science offers several effective strategies for intervention:

**Choice architecture and nudging:** These soft measures subtly alter the decision-making environment to guide individuals toward desired outcomes without restricting their freedom of choice. Effective strategies include restructuring the physical environment, such as making recycling bins more accessible, or implementing defaults, such as immediately opting consumers out of receiving plastic straws or cutlery. Other helpful tactics involve using timely prompts or cues (short messages or reminders placed at the moment of decision).

**Social and emotional strategies:** Interventions can leverage the innate human desire for social conformity by making social norms salient, illustrating what peers are actually doing or what the community expects. Appealing to emotions, such as pride in contributing to environmental well-being or avoiding feelings of guilt, strengthens the alignment between personal values and behaviour.

Ultimately, successfully reducing plastic pollution requires integrating these soft behavioural strategies, such as persuasion and enablement, with "hard" structural and regulatory measures, such as providing necessary infrastructure or imposing mandatory fees, to achieve sustained, large-scale behaviour change.

# 4. Project background and expansion

## Insights from Phase I pilot interventions

Phase I (2022–2024) of the "Breaking the Plastic Habit in ASEAN" project tested how behavioural insights can reduce SUP use in four ASEAN countries: Indonesia, the Philippines, Thailand, and Viet Nam. The four initial pilot interventions established essential baselines for single-use plastic consumption patterns and intervention responses across diverse settings. They demonstrated the significant potential of Behavioural Insights approaches to address plastic pollution in Southeast Asia and provided vital foundations for future scaling and local government engagement (Appleby et al. 2024).

The pilots confirmed that while technical solutions and policy instruments are necessary, they are insufficient on their own without a deep understanding of local contexts, meaningful stakeholder engagement, and iterative learning and adaptation. Outcomes varied significantly across different settings; while some settings achieved substantial reductions in plastic use, others showed more limited impacts. These differentiated impacts highlight the importance of tailoring behavioural interventions to local institutional, cultural, and infrastructural conditions. Notably, Phase I revealed that durable behaviour change requires broader systemic transformation involving multiple actors and sustained adaptive engagement. The pilots also prompted the need to reconsider how we monitor and evaluate the effectiveness of policies and practices applying behaviour change approaches.

## Why Phase II was needed: developing a common M&E approach

Building on these lessons, Phase II of Breaking the Plastic Habit in ASEAN was launched in October 2024 with an expanded scope, strengthened implementation capabilities, and a common monitoring and evaluation framework. The programme extends beyond academic settings to include the business sector, tourist sites, and sports events, and expands geographically to six countries: Cambodia, Indonesia, Lao PDR, the Philippines, Thailand, and Viet Nam. Six pilot cases will offer valuable contributions not only to regional efforts in tackling plastic pollution in Southeast Asia, but also to the broader global understanding of how behavioural insights can be applied to address complex sustainability challenges across diverse cultural and economic contexts.

## Structure and scope of the Phase II synthesis report

This report synthesises the experiences and lessons from the behaviour-centered interventions implemented during Phase II of the "Breaking the Plastic Habit in ASEAN" project. A particular focus is placed on the Monitoring and Evaluation (M&E) framework, the need for which became clear during Phase I. For Phase II, this framework was designed from the early stages and was systematically tested across all six pilot sites: Cambodia, Indonesia, Lao PDR, the Philippines, Thailand, and Viet Nam.

Accordingly, this report introduces the key concepts around M&E for behaviour change projects and presents the specific lessons and challenges identified from implementing the M&E framework in the six pilot activities. Readers will gain an in-depth understanding of how to leverage behavioural science to address complex sustainability challenges within ASEAN's varied cultural and economic landscapes, along with the practical knowledge to design and implement an M&E framework that drives continuous project adaptation and learning.

# Part 2

## Monitoring and Evaluation Applying a Psychosocial Theory of Change



# 1. Why monitoring and evaluation matters

## Monitoring and evaluation is essential for complex challenges

Efforts that seek to support the transition toward sustainable societies take on a complex challenge. For such efforts to be successful requires continuous adaptation through reflection and learning, necessitating smart monitoring and evaluation (Wals 2007). When addressing such challenges, sticking to predesigned solutions without sufficiently accounting for what is happening on the ground and flexibly adapting to emerging contexts is usually counterproductive. Actions often lead to unexpected feedback from ecosystems and socio-economic systems, meaning that proceeding directly toward pre-set goals is difficult (Patton 2011). Therefore, projects require regular reevaluation and adjustment to reflect the shifting contexts, real-time feedback, and the diverse voices of participants. Well-designed monitoring activities facilitate dialogue among partners, enabling timely reflection and flexible adaptation throughout all phases of project implementation. Furthermore, tracking progress using predetermined indicators is essential for ensuring accountability and improved planning, allowing projects to respond swiftly to emergent situations and systemic changes.

## The role of monitoring and evaluation in the project lifecycle

Monitoring is an essential project component that supports implementers and partners throughout the entire project lifecycle.

**In the preparation stage**, the process begins with the identification of key stakeholders and the development of a theory of change around the overall objective.

**A Theory of Change (ToC)** is a map of hypotheses, articulating how and why a set of interventions is expected to lead to desired outcomes and long-term impacts (Rogers 2014). It explicitly maps the causal pathways, assumptions, and enabling conditions linking activities to change.

The ToC is operationalised into assessment tools that translate the ToC into measurable impact-, outcome-, and output-level indicators. This process encourages a necessary dialogue among stakeholders. This dialogue allows participants to share their different perspectives on challenges, opportunities, contexts, and their desired visions for the future, ultimately leading to the co-production of a **shared understanding** of long-term goals.

**During implementation**, monitoring enables learning through doing. For project implementers, tracking progress reveals whether activities are implemented as intended and which contextual factors enable or constrain change (Rogers 2014). These insights support the flexible adaptation of activities, allowing teams to refine interventions, reallocate resources, and engage new partners (Sept et al. 2011). In parallel, continuous monitoring supports generating compelling and responsive narratives for external communication and facilitates longer-term planning. Programme coordinators, financial backers, and public partners gain valuable knowledge about local contexts and development narratives, which helps them identify the most effective means to support implementation, such as offering technical suggestions or aiding in partner engagement, potentially prompting the re-prioritisation of program activities (Sept et al. 2011). Ultimately, the integration of well-designed monitoring and evaluation into the project implementation process fosters trust and a sense of ownership among all parties.

Monitoring, reflection, and adaptation pathways are key to helping the program **inspire scaling**. Scaling occurs through various pathways, including geographical expansion (scaling-out), influencing policy (scaling-up), and through changing relationships and cultural values and beliefs (scaling-deep) (Moore et al. 2024). By clarifying key challenges and developing compelling project narratives through dialogue, projects can consider new strategic partnerships (e.g., local governments) and potential new funding sources, which are crucial for scaling. The overarching goal is to expand the perspective of scaling beyond the limits of external funding, building a long-term, self-sustaining, and agile project. This requires consideration of the participation of affected groups, the shift of ownership to participants, and the sustainability of the project over time (Mickelsson et al. 2019; Management Systems International 2016).

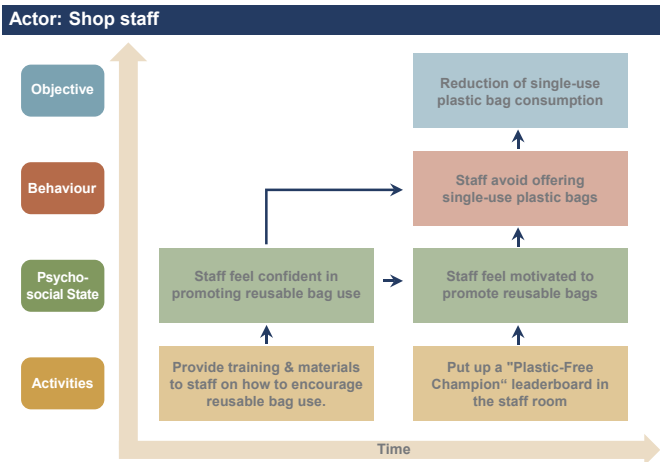
## 2. Designing a monitoring framework for behaviour-change projects

### How can we measure behaviour change?

Measuring behaviour change requires going beyond tracking activities or outputs to understanding whether, how, and why people change what they do. Effective monitoring frameworks must therefore capture not only observable actions, but also the psychological and social conditions that enable those actions to emerge and persist. In behaviour-change projects such as Breaking the Plastic Habit in ASEAN, measurement is anchored in a Theory of Change (ToC) that explicitly links interventions to behavioural outcomes through shifts in underlying psychosocial drivers. The following sections outline how this is operationalised through the inclusion of a psychosocial lens to the theory of change and a holistic data collection strategy captured through continuous monitoring.

### Applying a psychosocial lens to the theory of change

A standard theory of change serves as a critical directional flow diagram. It maps the hypothesised relationship between the program's elements (activities), the intermediate outputs (results of activities), and the ultimate program outcomes (the desired behaviour change). This process is essential because it compels program designers to articulate, and therefore test every intermediary causal hypothesis. By making these connections explicit, practitioners can clearly identify the various factors - both internal and external - that influence behaviour. This clarity, in turn, informs which elements must be monitored to accurately evaluate the intervention's success or failure.



The "psychosocial theory of change" model introduces a crucial layer of depth. It moves beyond the mechanistic link between activity and outcome by explicitly incorporating the psychological and social environment in which the stakeholder operates and decisions are taken. Rather than treating behaviour change as a linear response to information or incentives, the model recognises that behaviour is shaped by psychosocial states - which include deeply held beliefs, prevailing social norms, individual attitudes, perceived self-efficacy, shifting trends, and motivations. These psychosocial states are the true drivers of current behaviour and often the greatest barriers to adopting new ones. By mapping these states, the psychosocial ToC model enables:

**More comprehensive hypothesis testing:** The intervention is designed to surface patterns of belief and social influences, targeting specific, measurable shifts in these psychosocial states, not just the observable behaviour.

**Adaptive management:** When monitoring reveals that an intervention is not performing as anticipated, the psychosocial ToC provides a diagnostic framework. Implementers can pinpoint whether the failure lies in the execution of activities, the production of intended outputs, or, critically, a failure to shift the targeted psychosocial states that underpin behaviours. This allows for rapid, data-driven course correction.

## Application to the implementation plan

The development of the implementation plan follows a systematic process, ensuring that all activities are intentionally and logically linked to the desired end state:

- **Desired impact:** Start with the ultimate goal (e.g., a 50% reduction in single-use plastic consumption).
- **Observable behaviour:** Define the specific, measurable behaviour required to achieve that impact (e.g., consistently bringing a reusable cup/bag).
- **Psychosocial states:** Identify the necessary psychosocial shifts required for the observable behaviour to take hold (e.g., increasing attitude towards environmental responsibility, raising self-efficacy for carrying reusables, and establishing a positive social norm).
- **Activities:** Design the program activities that are explicitly intended to create those specific psychosocial shifts (e.g., community workshops to address attitudes, skill-building sessions to increase self-efficacy, and public campaigns to highlight new social norms).

This approach forces implementers to consider the "bigger picture" - the context, internal drivers, and external pressures - in which the behaviour change is sought. Furthermore, a preliminary assessment of these psychosocial states is ideally conducted for each individual stakeholder or distinct segment of the target audience, acknowledging that beliefs and motivations are heterogeneous.

## Essential data collection: a holistic approach

Effective monitoring and evaluation is predicated on the systematic collection of diverse data types at strategic intervals throughout a program's lifecycle. To achieve a comprehensive understanding of program impact, organisations must blend quantitative and qualitative data, focusing on observable direct behaviours, non-observable indirect behaviours, and internal psychosocial states. This structured approach is further enhanced by a commitment to continuous learning and reflection, which utilises qualitative tracking to surface real-time obstacles and foster an adaptive management culture. By integrating these elements, programmes can ensure that crucial contextual information is preserved and that interventions remain responsive to emerging challenges.

## Dimensional data collection strategies

Data type	Description	Measurement method examples
<b>Observable direct behaviours</b>	Actions that can be seen and quantified, reflecting the target behaviour.	Observation checklists, quantitative surveys on self-reported actions (with validation), sales data of reusable items, waste audits.
<b>Non-observable indirect behaviours</b>	Actions or choices that imply a shift in the target behaviour but are not directly visible (e.g., policy support, purchasing decisions).	Policy tracking, purchasing receipts, analysis of online engagement with pro-environmental content.
<b>Psychosocial states</b>	Internal, non-observable factors that drive behaviour (beliefs, attitudes, motivation, social norms, self-efficacy).	Psychometric scales (e.g., Likert scales) in surveys, qualitative interviews, focus group discussions, projective techniques.

## Temporal data collection lifecycle

Data must be collected systematically at multiple points to accurately measure progress and ensure long-term sustainability.

- **Baseline:** Essential pre-intervention data used to establish the current state of behaviours and psychosocial factors before any activities begin.
- **Midline:** Collected during the implementation phase to assess initial progress, validate intermediary hypotheses, and inform necessary adaptive management adjustments.
- **Endline:** Post-intervention data used to measure immediate programme outcomes and changes in behaviour and psychosocial states.
- **Post-implementation:** Data collected after the official end of a programme to assess the long-term sustainability and durability of the achieved behaviour change.

## The role of continuous learning and reflection

Beyond structured surveys and formal assessments, continuous qualitative tracking is paramount to maintaining a "pulse" on the program. This is achieved through tools such as monthly check-in calls and guided reflection journals.

### Objectives of continuous tracking

The use of ongoing reflection serves three critical purposes:

- **Tracking implementation progress:** Ensuring that activities are being executed according to the established plan.
- **Surfacing obstacles and difficulties:** Creating a non-punitive environment for teams to report unforeseen challenges, cultural barriers, or operational issues that might be overlooked by formal reporting structures.
- **Capturing learnings:** Documenting emergent insights and real-time adaptations made by implementing teams.

## Fostering adaptive management

This continuous feedback loop is vital for capturing contextual information that is often lost when data is only aggregated at the end of an implementation period. By prioritising real-time reflection, organisations foster a learning-oriented culture that allows for informed, adaptive management.

# 3. Lessons and scaling pathways for psychosocial M&E frameworks

## Piloting a monitoring and evaluation framework

Traditional M&E models fail because they ignore the intention-action gap, operating within a "black box" that limits oversight to surface-level outputs like workshop attendance or toolkit distribution. Phase II of Breaking the Plastic Habit in ASEAN piloted a shift toward a psychosocially informed methodology. This evolution is a strategic necessity; sustainable societal transitions are inherently complex, and relying on predesigned solutions without accounting for ground-level psychological shifts is counterproductive. To be effective, behaviour-centered interventions must move beyond rudimentary activity tracking to monitor the specific psychosocial states – **beliefs, social norms, attitudes, self-efficacy, and motivations** – that dictate human action and allow for continuous, evidence-based adaptation. The M&E framework developed in this project was conceptualised as a practical, high-utility tool designed to support the intervention lifecycle: from design and implementation to rigorous impact assessment.

To resolve the chronic tension that exists between rigorous data collection and monitoring and operational usability, the framework synthesises three core components into a high-utility instrument:

- **Theory of change-aligned indicators:** Granular metrics mapped to specific behavioural stages (e.g., shifts in perceived self-efficacy or social norms), ensuring every intervention stage is logically anchored to a psychological or social driver.
- **Structured data tables:** Standardised templates designed to harmonize data gathering across culturally diverse implementation teams.
- **Reflection journals:** Qualitative instruments used for continuous tracking, allowing practitioners to document "in-the-field" insights and facilitate the iterative strategy shifts required for adaptive management.

By optimising for an intuitive flow, this structural design transformed M&E from a post-hoc reporting burden into an active, learning-oriented asset during the pilot phase.

## Evaluating strategic successes: validating the psychosocial lens

The pilot phase validated the framework's underlying logic, demonstrating its capacity to shift organisational mindsets from a narrow "activity-completion" focus to a rigorous "behavioural-outcome" orientation. This diagnostic approach ensured that project success was defined by actual societal transition rather than the mere execution of budgeted tasks.

The evaluation identified five primary strategic successes:

**Intentional design:** The framework functioned as a behavioural "nudge" for implementers, forcing a pause to map logic before action. This helped teams overcome "Action Bias" – the reflexive urge to launch activities regardless of strategic alignment – resulting in streamlined project plans where only the most impactful, logic-driven actions were retained.

**Predictive capability:** By methodically mapping drivers such as social norms and motivations, teams gained a more in-depth understanding of the context in which the target behaviour takes place when compared with traditional M&E approaches. While standard models rely on lagging indicators (what has already occurred), psychosocial mapping provides a predictive lens. This allows for proactive intervention adjustments before endline results prove a failure, thereby saving critical time, resources, and political capital in high-stakes funding environments.

**Partner alignment:** The framework unified diverse stakeholders, including researchers and local implementers, around a shared definition of success, ensuring all partners remained committed to the same causal pathways.

**Adaptive management:** Explicitly transparent Theories of Change provided the flexibility needed to pivot activities when local contexts shifted, without losing sight of the ultimate behavioural goals.

**Indicator clarification:** The pilots demonstrated the need for the development of clearly defined, practical indicators that can be effectively monitored in fast paced and high-pressure environments. A key learning was that measuring a more limited number of streamlined, targeted indicators that are anchored in the PSToC can result in higher quality data and require fewer resources to monitor and evaluate.

While the pilot validated the framework's internal logic, its collision with established institutional norms revealed a fundamental rift between activity-based KPIs and behavioural realities.

## Implementation friction

Introducing behavioural science methodologies into established project cycles generates friction that reflects the inherent tension between heuristic-driven planning – where managers rely on "gut feel" – and evidence-based behavioural design. This friction is not a mere administrative hurdle; it is a direct conflict between the desire for linear simplicity and the reality of human choice.

### Comparative analysis: project expectations vs. psychosocial realities

Feature	Standard project expectations (activity-based)	Psychosocial M&E realities (behavioural outcome milestones)
<b>Logic direction</b>	Linear planning starting with tangible, exciting activities.	Behaviour-first logic; requires identifying the "why" before the "what."
<b>Timing and integration</b>	M&E as a final reporting step or an elective afterthought.	Requires early integration; late introduction creates a "sunk cost" burden.
<b>Indicator scalability</b>	Desire for broad, high-volume data across many metrics.	Risk of "force-fitting" indicators; teams default to the most straightforward metrics, leading to data decay.
<b>Capacity variance</b>	Assumption of uniform implementation capability.	High adaptation by researchers; significant friction for businesses and new partners.

This friction frequently triggers a compliance-over-insight mindset. When teams encounter late-stage logic shifts or are forced to force-fit indicators during short implementation windows, the framework is perceived as a reporting burden rather than a learning tool. This results in the collection of "safe" but superficial data, which ultimately starves the project of the deep behavioural insights required for genuine adaptation.

## 4. Critical takeaways: essential requirements for behavioural M&E

**Early intervention and logic internalisation:** To avoid the sunk cost fallacy – where teams refuse to adjust activities because they are already locked in – the framework must be introduced during the pre-planning stage. Teams must internalise the "why" of the logic early. If they do not, they cannot adapt when the "what" fails.

- Failing to integrate logic early means teams could remain committed to ineffective activities, wasting resources on actions that do not drive behaviour change.

**Mitigation of implementer bias:** Identifying psychosocial drivers is a high-level skill susceptible to team assumptions. Implementation must be supported by preliminary stakeholder consultation to ensure interventions are grounded in participant needs rather than implementer intuition.

- Without grounding drivers in observed reality, interventions can target the wrong motivations, or the wrong behaviour-actor pairings, leading to project failure based on flawed internal assumptions.

**The coaching requirement:** There is a non-negotiable need for hands-on M&E coaching, particularly for partners lacking behavioural expertise. Coaching support can most effectively be used during the project planning phase, where the psychosocial theory of change is developed and implementers need to gain a deep understanding of their target groups, behaviours, and contexts. Technical guidance is also valuable for identifying indicators (and actor-behaviour pairings) as well as establishing the framework for assessment: baseline, midline, and endline data points.

- Without expert coaching, partners lacking behavioural expertise can struggle to maintain a clear focus on behaviourally-informed methods, resulting in inconsistent data that cannot prove impact.

**The rigor-usability paradox:** The framework must be simplified while maintaining flexibility and rigour. Consolidating the framework into a "co-learning" tool would reduce the perceived reporting burden and ensure implementers engage deeply enough with the tool to produce high-quality, actionable data.

- If the tool is perceived as too academic, or is too overwhelming, implementers will disengage, leading to a loss of the high-quality, actionable data required for effective behaviour change implementations.

# Part 3

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## Case Studies: Experiences from Six Pilot Interventions

Phase II of the Breaking the Plastic Habit program expands geographically across ASEAN, with six pilot interventions implemented in Cambodia, Indonesia, Lao PDR, the Philippines, Thailand, and Viet Nam. The pilots also extend beyond previous school-based settings of Phase I, to include the business sector, tourist sites, and sports events. Each case study presents their intervention design, outcomes achieved, and implementation challenges. In addition, case studies share implementing partners' experiences in applying the behaviour-centred Monitoring and Evaluation Framework introduced in the previous section.

## Phase II Partners



This section presents six case studies from the Breaking the Plastic Habit in Asia Phase II pilots, reflecting both continuity and expansion in the project’s approach. Two partners built on their Phase I experience by refining and scaling behaviourally informed interventions in familiar institutional settings: Centre for Southeast Asian Studies (Indonesia) and University of the Philippines Diliman. Their continued engagement allowed Phase II to deepen learning, strengthen monitoring, and test the durability of behaviour change over time. Chulalongkorn University, also a returning partner from Phase I, shifted its focus in Phase II from campus food markets to unsustainable clothing consumption linked to the annual university football event, demonstrating the adaptability of behavioural approaches across sectors.

Phase II also welcomed three new implementing partners: Ministry of Environment of Cambodia, Econox Laos, and Nopa (Viet Nam). These additions enabled the project to expand geographically to Cambodia and Lao PDR and bring new perspectives from government and the private sector. Building on lessons from Phase I, the Phase II pilots broadened the scope of intervention beyond food and beverage settings to include the textile and hospitality sectors, while introducing more systemic reuse models and deeper collaboration with local stakeholders.

Together, these six case studies not only offer practical insights into both the opportunities and constraints of scaling behaviour change for plastic reduction in ASEAN settings, but also illustrate how behaviourally informed approaches can be adapted across sectors, actor types, and national contexts.

# Cambodia



## Promoting reusable tumbler use through inter-generational environmental education

Led by the Ministry of Environment in partnership with school officials, this pilot study was implemented in two eco-schools in Cambodia, from late June to late August 2025.

<b>Objective</b>	Reduce reliance on single-use PET bottles by increasing the ownership and use of reusable tumblers among students and their families
<b>Location</b>	Two eco-schools: Siem Reap (urban tourist area) and Tbong Khmum (peri-urban area)
<b>Target group</b>	304 primary school students from the two eco-schools
<b>Baseline behaviour</b>	28% of students on average used a tumbler across the two schools, despite the availability of water dispensers

### Behaviour change intervention

The intervention tested whether environmental storytelling could encourage students to use reusable tumblers and influence household behaviour through inter-generational learning. It introduced kamishibai (Japanese picture storytelling), using an original story about a young girl confronting plastic pollution ([Maruyama and Igei 2024](#)). Teachers from both schools were trained to use storytelling as a pedagogical tool for environmental education. Students were divided into three groups: a control group without storytelling, a group listening to the story alone, and a group listening together with their parents. After the session, students completed a short homework assignment and received a tumbler order form, which served as a behavioural decision point to measure their willingness to replace single-use PET bottles with reusable tumblers.



Activities	Description	Behaviour levers
A1: Training of teachers on “techniques or tactics to tell a story”	4 teachers from each school joined the training to learn how to design and develop educational materials for storytelling, storytelling strategies, and facts about the harmful effects of plastic pollution on the environment and human health.	Information Provision Social Influence
A2: Kamishibai Storytelling with homework	Students listened to the kamishibai story, then brought homework home to complete with their parents. Students also recorded their emotional reactions using four emojis (happy, sad, angry, neutral), allowing the project to note affective engagement.	Information Provision Emotional Appeals
A3: Kamishibai Storytelling with parents	Students and parents listened to the story together and completed the homework immediately afterwards at school.	Information Provision Emotional Appeals Social Influence
A4: Homework without storytelling (control)	Students received no storytelling but were asked to complete the same homework decision task with their parents.	Information Provision

## Application of behavioural levers

The project employed several key behavioural levers:

**Information:** Kamishibai storytelling delivered environmental information in an accessible format; teachers were trained to embed key messages about plastic pollution.

**Emotional appeals:** Kamishibai’s visual and narrative elements were used to evoke emotion, empathy, and concern among children. Following the kamishibai activity, students were asked to identify their emotional reaction by ticking one of the four types of emotion icons (happy, sad, angry, neutral).

**Social influence:** Children acted as inter-generational messengers, either retelling the story at home (Testing 1) or engaging jointly with their parents (Testing 2).

## Monitoring and evaluation

The project team and IGES researchers conducted joint discussions and field visits to review the project’s objectives, implementation plan, and target indicators. These discussions informed the development of the M&E framework indicators.

Theory of Change	Indicators
<b>Objective</b>	Students purchase PET bottles less frequently Students bring reusable tumblers more frequently
<b>Behaviour</b>	Frequency of students purchasing PET Frequency of students bringing reusable tumblers Actions taken in families to help students bring reusable tumblers
<b>Psychosocial State</b>	Students' emotions/feelings about PET bottle use Students' feelings about bringing reusable tumblers Parents' feelings / motivations about helping children bring reusable tumblers
<b>Activity</b>	Number of students participating in the storytelling activity Number of tumblers ordered per family Number of parents responding to post-experiment surveys

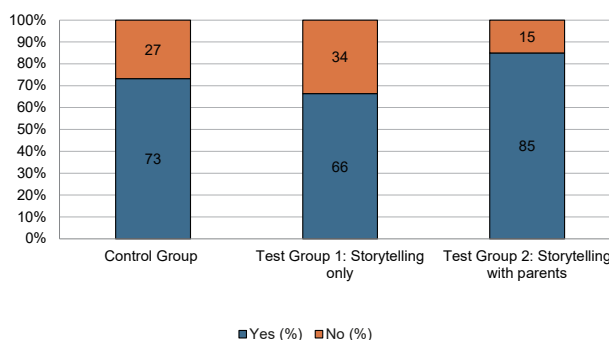
## Reflections and challenges

The behaviour-centred M&E framework highlighted the importance of accounting for psychosocial dynamics, particularly the influence of parents and peer interaction, but also teachers' role in shaping behavioural outcomes. As a result, the intervention design was adjusted to leverage on social influence by including parent-child storytelling sessions into the intervention. Overall, the M&E framework functioned not only as a monitoring tool but also as a mechanism for adaptive learning, enabling teams to refine the intervention and align it more closely with real-world school conditions.

## Implementation results and analysis

### Plastic reduction outcomes:

Following the intervention, 73% of students decided to purchase a tumbler, representing approximately a 45% increase in tumbler adoption. However, uptake varied across experiment groups. The highest purchase rate was observed in the storytelling with parents group (85%), followed by the control group (73%), while the storytelling-only group showed the lowest uptake (66%). These findings suggest that direct parental engagement significantly strengthens behavioural uptake, whereas child-only storytelling was insufficient to influence household purchasing decisions.



### Behavioural and psychosocial outcomes:

While initial adoption was high, with many students expressing willingness to purchase a tumbler, only about half consistently used it three months later, highlighting the challenge of sustaining new habits over time. Surveys showed that both students and parents recognised the benefits of reusable tumblers, including durability, convenience, and reduced plastic waste, and students often expressed pride in using them. However, financial constraints and the convenience of readily available PET bottles remained barriers for some families. Implementation also faced data collection limitations and uneven group participation.

Overall, the results suggest that while storytelling can influence children's attitudes and behaviours, direct parental engagement is essential for lasting household behaviour change. Integrating storytelling and parent-child activities into school environmental education programmes therefore offers a promising pathway for scaling behaviour change within Cambodia's eco-school system.



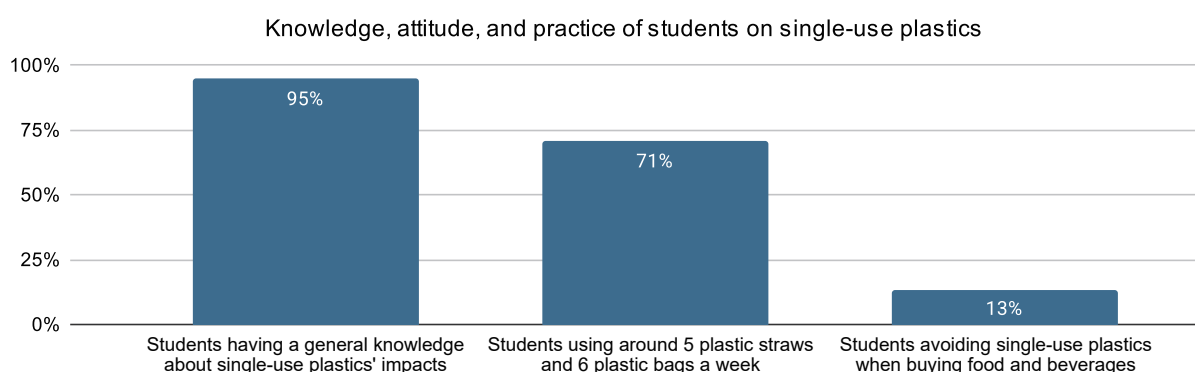
# Indonesia

Jakarta

## Nudging strategy to reduce single-use plastics in Darunnajah Boarding School

The project was led by the Center for Southeast Asian Studies (CSEAS), in partnership with a boarding school in Jakarta, from late April to late June 2025.

<b>Objective</b>	Reduce reliance on single-use PET bottles by increasing the ownership and use of reusable tumblers among students and their families
<b>Location</b>	Darunnajah Boarding School in Jakarta, Indonesia <ul style="list-style-type: none"> <li>- Darunnajah Fried Chicken (DFC), a fast-food chicken stall owned by the school's management</li> <li>- DN Store, a small shop selling beverages</li> </ul>
<b>Target group</b>	Students, teachers, and vendors (staff selling at DFC and DN Store)
<b>Baseline behaviour</b>	Vendors in the school area typically provided SUP as the default option for carrier bags and straws due to the absence of specific regulations. Most student (95%) declared to have a high level of knowledge about the environmental and health impacts of single-use plastics. However, only 13% of students reported actively refusing single-use plastics at baseline, revealing a clear knowledge–practice gap (n= 342 students).



## Behaviour change intervention

Behaviour change interventions for the Darunnajah Boarding School project integrated choice architecture, emotional appeals, social influence, and information levers to reduce plastic bags at DFC and plastic straws at DN Store. The strategy leveraged the school's unique communal lifestyle, which was conducive to peer influence.



### Interventions

Activities	Description	Behaviour levers
A1: Relocation of plastic bags and straws	Plastic bags at Darunnajah Fried Chicken (DFC) and straw containers at the DN Store were relocated from visible, accessible areas (such as on or above counters) to hidden spots (under the cashier counter), to only provide these items upon request.	Choice architecture
A2: Talk shows, seminars, and an upcycling workshop	An upcycling workshop equipped 50 students with the practical skill of making pouches from plastic bags 286 students joined the talk show, 252 attended the seminar, and 46 participated in the workshop	Social influences
A3: Visual communication materials	Four colourful banners featuring culturally resonant slogans in Indonesian were installed in high-traffic areas. DFC staff wore four bright red aprons designed with student animations and religious messages	Emotional Appeals Information

### Application of behavioural levers

The intervention design combined multiple behavioural levers, including choice architecture, emotional appeals, rules & regulations, and social influences, and information.

**Choice architecture:** Plastic bags at Darunnajah Fried Chicken (DFC) and straw containers at the DN Store were relocated from visible, accessible areas (such as on or above counters) to hidden spots (under the cashier counter). This change discouraged buyers from requesting items they did not immediately see, implying they were not provided by default. The goal was to train vendors to only provide these items upon specific request, thereby developing a new, less-wasteful habit among consumers.

**Emotional appeals:** The project used communication materials to motivate participants. Brightly coloured banners featuring persuasive messages, such as "Kurangi Plastik, Tambah Pahala" (Reduce Plastic, Gain Blessings), linking environmental protection to religious values and raising awareness among shoppers, were placed in high-traffic student areas. Additionally, DFC staff wore red aprons with messages like "Plastic is only used once, but waste lasts forever" to ensure the campaign was visually engaging.

The project strongly leveraged **social influence**, supported by the communal lifestyle of the boarding school, where students live in close-knit groups. The strategy involved encouraging students to become peer influencers. This was achieved through activities like talk shows, seminars, and an upcycling workshop, which promoted a sense of ownership and internal motivation among student participants. When one group started refusing plastic, others quickly followed the trend.

The **information** behavioural lever was primarily used through events (as detailed under Social Influence above) and visual materials to raise awareness. The events provided students and vendors with information regarding the impact of plastic waste. Banners were also installed with culturally relevant messages in Indonesian. The project also provided a platform for stakeholders to share information on behaviour change with the students.

A key design constraint was the decision to strategically exclude material incentives (rewards for plastic reduction or fees for plastic use) because boarding school students have limited access to cash or allowances. The vendors also benefit indirectly through reduced expenditure from the resulting decline in the provision of plastic bags and straws.

### Monitoring and evaluation

The intervention was implemented from 30 April to 20 June 2025, with daily monitoring and weekly observations at the two pilot locations (DFC and DN Store).

Theory of Change	Indicators
Objective	Estimated reduction of plastic straws and bags consumption. This quantitative data was collected through field surveys and regular monitoring, with baseline and endline values recorded.
Behaviour	Number of plastic straws and plastic bags provided weekly. Tracking was done via weekly field observations and vendor confirmations.
Psychosocial State	Indicators included the percentage of students refusing plastics, teacher engagement in related education, and vendor understanding of both environmental and financial benefits. Data was gathered through questionnaire surveys (including the baseline Knowledge, Attitude, and Practice survey), interviews, and field observations.
Activity	Indicators tracked student participation in activities (talk show, seminar, upcycling workshop) and the deployment of communication materials (banners and aprons). Data sources included attendance records, narrative reports, and direct observations.



## Reflections and challenges

The M&E framework proved valuable for structuring the intervention and identifying measurable indicators, while its detailed documentation will support replication and adaptation in other contexts. However, challenges were encountered, including the time-consuming process of translating general ideas into detailed work plans and the initial difficulty in determining specific, relevant, and measurable indicators.

## Implementation results and analysis

The project successfully implemented a multi-faceted nudging strategy, achieving significant behavioural and quantitative outcomes by leveraging the communal boarding school environment to foster ownership and peer influence.

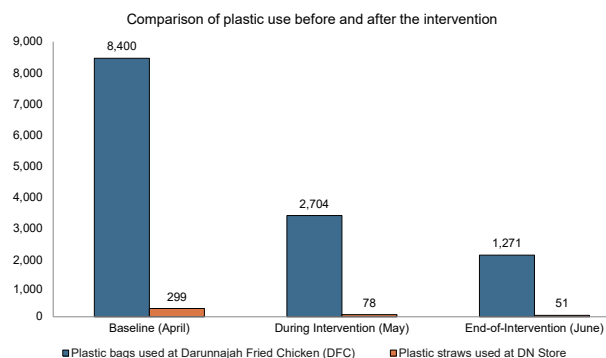
### Plastic reduction outcomes:

The intervention led to a noticeable reduction in single-use plastic use across food service outlets. The use of single-use plastic bags at Darunnajah Fried Chicken (DFC) achieved a drastic reduction of approximately 50% by the end of the eight-week intervention, from 8,400 bags to 1,271 bags provided every month. Similarly, plastic straw consumption at the DN Store decreased by 80% at the end of the intervention, despite minor fluctuations between monitoring periods.



### Behavioural and psychosocial outcomes:

The intervention successfully translated the students' high baseline knowledge of plastic dangers into concrete action. Although a post-intervention survey was not conducted, the substantial reduction in plastic bag and plastic straw use across Darunnajah Fried Chicken (DFC) and DN Store indicates there is an increase of "plastic avoidant behaviour" during the intervention period. Furthermore, teachers and vendors demonstrated 100% engagement and understanding of the environmental and financial benefits of the reduction efforts by the project's conclusion.



Suci

(Counter Staff at Darunnajah Fried Chicken)

I am proud that my role at DFC not only serves consumers, but also contributes to reducing single-use plastics and keeping the school environment clean.



A customer of Darunnajah Fried Chicken (DFC)

I really appreciate the effort to reduce single-use plastics. It's a good initiative. But in practice, carrying the food without a plastic bag is tricky on a motorbike. I hope there will be a more convenient alternative.

# Lao PDR

## Rent your cup: a circular service system for hospitality in Lao PDR

The Rent Your Cup (ເຊົ່າຈອກເຈົ້າ - Sao-Jork-Jao) project is a circular service system led by Econox Laos since 2023 to enable customers to rent reusable stainless-steel cups at participating businesses and return them later, promoting a convenient, environmentally responsible alternative.

<b>Objective</b>	<p>Reduce reliance on single-use plastic cups in the hospitality sector by enabling customers to rent, return, and reuse standardised cups across participating beverage providers and entertainment events.</p> <p>The long-term goal is to build a national network of participating cafés and restaurants, making reusable culture accessible and appealing across Laos.</p>
<b>Location</b>	14 participating cafés in Vientiane Capital, Vang Veng, and Luang Prabang
<b>Target group</b>	<p>Businesses: cafés, restaurants, beverage providers, and hospitality businesses in the tourism sector, as well as event venues such as food and music festivals where beverage containers generate significant single-use plastic waste.</p> <p>Consumers: younger, urban, and environmentally conscious consumers who have demonstrated a willingness to adopt new practices, especially those aligned with lifestyle trends and social reputation.</p>
<b>Baseline behaviour</b>	The rapid expansion of café culture and street-side beverage businesses deeply normalised the use of single-use plastic cups, lids, straws, and sachets. Café and restaurant owners naturally defaulted to single-use plastics because they prioritised operational ease and immediate customer satisfaction.

### Behaviour change intervention

The Rent Your Cup project was designed as a circular service system to integrate reuse into the normal take-away beverage experience in Laos. Building on lessons learned from a 2023 pilot, the 2025 Phase 2 intervention focused on scaling and strengthening behaviour change components. In Phase 2, the reusable cups were redesigned, transitioning to durable, fully recyclable stainless steel and featuring traditional Lao motifs to make the design visually appealing and culturally distinctive. Furthermore, a central innovation was the introduction of a QR code tracking system to simplify the rental process for both customers and businesses.

Through coordinated training for participating businesses, promotional campaigns, festival participation, and continuous monitoring, Rent Your Cup positioned reuse as an accessible and desirable alternative within Laos' growing hospitality sector.



## Interventions

Activities	Description	Behaviour levers
A1: Rental cup service with QR code tracking	Streamlined stainless steel cup rental and return process to make reuse the easiest choice, supported by QR-code tracking. Cups were designed to be visually appealing and reflecting Lao culture. 13 cafés participated in Rent Your Cup	Choice architecture Emotional Appeals
A2: Launch event and online promotion campaign	Awareness campaigns, reusable cups display at the sites, visual cues/posters, social media storytelling	Information Emotional Appeals
A3: Refill rewards, discounts for own cup	Discount on reusables offered by some cafes (ranging from 2,000 - 3,000 LAK per cup) Deposit-refund system	Material Incentives
A4: Training, baseline assessment, and certification for participating businesses	Training for participating businesses' staff on the rental cup system and cup cleaning, and continuous communication and support Baseline assessment on plastic waste practices Online promotion of participating businesses Opportunity to be certified as a Plastic Free Laos member	Social Influence Information

## Application of behavioural levers

The intervention applied a combination of five core Behavioural Levers – social influence, information, choice architecture, emotional appeals, and material incentives – to encourage customers to adopt reusable habits through visibility, accessibility, attraction, and influence.

**Choice architecture** focused on making the reusable option the easiest choice. This was significantly strengthened by introducing a QR code tracking system. The system streamlined the cup rental and return process, ensuring it was simple, efficient, and user-friendly for both customers and participating businesses, thereby minimising the workload for all parties.

**Emotional appeals** were used to drive adoption by fostering pride and belonging in reuse behaviour. This was achieved through the stainless-steel cups' visually appealing design, which integrated Lao traditional motifs and cultural symbols. The aesthetic value made the cup a desirable object, causing many users to view it as a personal item or souvenir, strengthening their emotional connection to the project.

**Social influence** efforts were integrated in the project to drive adoption, recognising the major role of word-of-mouth and social reputation in Laos. The intervention aimed to make reuse behaviour visible and socially desirable. The aesthetically appealing stainless-steel cups, designed with Lao traditional motifs, served as desirable objects that users wanted to be seen with. This visibility encouraged adoption by aligning reuse with lifestyle trends and social reputation.

The **information** lever was utilised through simplified, culturally resonant messaging, such as the slogan “Sao Jork Jao” (ເຊົ່າຈອກເຈົ້າ), meaning “Rent Your Cup”. Communication materials in Lao and English emphasised that “you don’t need to own the cup to enjoy your drink”. The project also provided information to businesses and the public on plastic pollution impacts and the National Plastic Action Plan to raise awareness and motivate action toward sustainability.

**Material incentives** were applied with some cafes offering discounts for reusable cups (ranging from 2,000 - 3,000 LAK per cup). Customers were required to pay a deposit when renting the stainless-steel cup. Although this system existed, the high desirability of the Lao-inspired cup design led most users to keep the cup, treating it as a personal item or souvenir, rather than returning it for the deposit refund, indicating the emotional appeal outweighed the material incentive at this stage.

### Monitoring and evaluation

The project's M&E indicators were structured across three key dimensions: changes in consumer behaviour, business participation and engagement, and psychosocial drivers. To ensure a balance between precision and practical feasibility, both quantitative and qualitative data were collected. Quantitative data were continuously logged via the QR code tracking system, which recorded cup circulation, rentals, and returns. This system also captured customer demographics and their motivations for renting the cup through a brief questionnaire administered during the rental process. Qualitative data was obtained through short, on-site surveys for customers, which focused on two core questions: "Why did you choose to use Rent Your Cup today?" and "Where are you most likely to rent the cup again in the future?". Parallel interviews were conducted bi-weekly with café owners and staff to understand operational fit, challenges, and customer interaction patterns. Data collection included monthly surveys at pilot cafés and the use of observation checklists during field visits to assess campaign visibility and behaviour. This triangulation of findings ensured that behavioural indicators were grounded in real-life practice.



Theory of Change	Indicators
<b>Objective</b>	The primary indicator was the number of businesses implementing the Rent Your Cup system.
<b>Behaviour</b>	Success was measured by the number of customers choosing reusable cups over single-use. The shift from single-use to reusable was tracked through the project's QR code system.
<b>Psychosocial State</b>	Changes in the psychosocial state of customers and staff was tracked through qualitative feedback on awareness, motivation, and satisfaction. Data was collected through short surveys embedded in the QR code system.
<b>Activity</b>	Data was collected via continuous quantitative logs on cup circulation, rentals, and returns using the QR tracking system. Data also included tracking the visibility of campaign materials and customer-staff interactions through observation checklists. Qualitative data was collected bi-weekly via interview notes from follow-ups with participating cafés.

## Reflections and challenges

The M&E framework helped maintain a clear behavioural focus by integrating psychosocial drivers into monitoring. Its flexibility allowed the use of light-touch tools (QR logs, short surveys, interviews), making data collection feasible in fast-paced café settings. However, several adjustments were required during implementation. Translating the conceptual theory of change into operational steps took additional time to align with on-site workflows. Data collection tools also had to be shortened due to brief customer interactions, and an early miscommunication led to 42 rentals being recorded using an outdated questionnaire. Finally, some indicators initially lacked clarity and were simplified to ensure consistent and practical data collection.

## Implementation results and analysis

The Rent Your Cup project was designed to measure success across behavioural adoption and environmental impact, driven by the goal of reducing single-use plastic waste in Laos' hospitality sector.

### Plastic reduction outcomes:

Monitoring data illustrates the early behavioural patterns emerging from the Rent Your Cup intervention. As of 20 February 2026, the system recorded 125 total cup rentals, with 14 cups returned, representing a return rate of approximately 11.2%. While the return rate remains relatively low, it reflects a behavioural trend observed during the earlier phase of implementation: many users chose to keep the aesthetically designed stainless-steel cups rather than return them for the deposit refund. This behaviour suggests that the emotional and symbolic value of the cup, particularly its Lao-inspired design, plays a strong role in shaping user decisions.

At the same time, the system recorded 19 repeat users, indicating that a segment of customers is starting to integrate the reusable cup system into their regular beverage consumption habits. This repeat engagement is an early indicator of habit formation and growing acceptance of reuse practices. Overall,

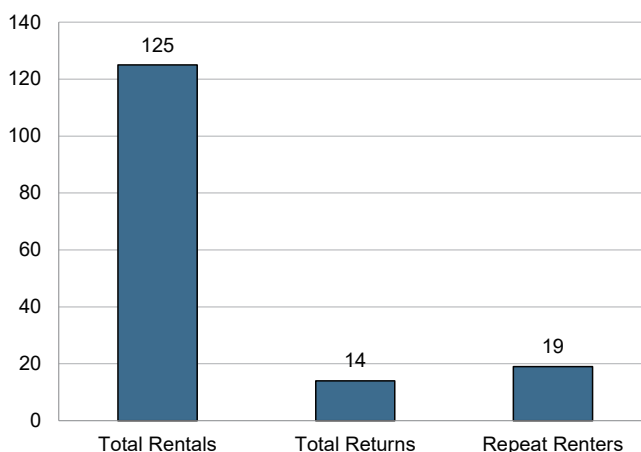
the results suggest that the intervention is generating initial adoption and visibility, although the circular return system remains underdeveloped. Future iterations may need to strengthen return incentives, expand return points, or reinforce social norms around cup circulation to support the intended reuse cycle.

### Behavioural and psychosocial outcomes:

Survey results highlight strong environmental motivation among users: 86.6% of respondents (n=67) reported renting the cup primarily to reduce plastic waste. The cup's aesthetic appeal and the convenience of the system also supported users' willingness to experiment with reusable options.

Return behaviour has shown gradual improvement over time. One month after launch, only three customers had returned their cups (5.9% return rate). After three months, the return rate increased to 11.2%, representing an 89.8% improvement compared with the earlier measurement. While still relatively low, this trend suggests that return behaviour may strengthen as users become more familiar with the system.

Key participation metrics (as of 10 Feb 2026)



Survey responses also indicate strong potential for expansion within the hospitality sector. Approximately 61% of respondents identified cafés as the location where they would most likely rent the cup again, reflecting the system’s current implementation model. Restaurants (28%) and tourist locations (24%) also show promising potential for expansion. In contrast, transport hubs such as train stations, airports, and bus stations received fewer responses, likely due to the system’s limited presence in these locations and the more transient nature of travel settings.



Tony  
Owner of Ratio Coffee  
(participating café)

It's a good project and shows that reuse habits can be created from these small actions. And these small actions can create changes in society from people renting cups to changing their own behaviour. These tools are truly an initiative to change behaviour for people to care for the world.



Client

The initiative is nice. What I like the most are the design of the cup and the strong material. It can be a good souvenir when going abroad

# The Philippines

Quezon City

## Pilot project for sustainable vending in UP Diliman

The Pilot Project for Sustainable Vending in UP Diliman - Phase II aimed to reduce plastic waste and mismanagement in the food sector at Gyud Food, one of UPD's busiest food hubs. Implemented from October 2024 to August 2025, the project was led by the UP Institute of Civil Engineering in collaboration with Gyud Food Management, the UP Diliman Environmental Management Office (UP DEMO), and the Quezon City Local Government.

<b>Objective</b>	Reduction of plastic waste generation and mismanagement in the food sector of UP Diliman 1) Vendors to shift from plastic to non-plastic alternatives, 2) Customers to avoid plastic use and to properly segregate their waste upon disposal, and 3) Housekeeping staff to consistently segregate waste while recovering recyclable plastics.
<b>Location</b>	Gyud Food, a multi-vendor commercial establishment in UP Diliman, hosting over 30 concessionaires and attracting around 1,700 visitors daily.
<b>Target group</b>	Businesses: Guyd Food vendors Customers: UP Diliman students, faculty, staff, and external visitors Housekeeping: Staff responsible for daily cleaning, waste collection, and waste segregation
<b>Baseline behaviour</b>	Plastic accounts for 33.48% of the daily waste generation of 168.20 kg. Limited awareness of existing plastic ordinances, inconsistent vendor practices, weak waste segregation due to low staff motivation, and infrastructure constraints affecting reusable foodware. Convenience and the limited availability of alternatives to single-use plastics further influenced plastic use among both vendors and customers.

## Behaviour change intervention

The interventions addressed the full cycle of plastic consumption and disposal, ensuring that responsibilities were shared across all key actors.



## Interventions

Activities	Description	Behaviour levers
A1. Awareness and Education Seminar about QC Ordinances and the environmental benefits of avoiding SUPs for vendors	33 vendors attended a seminar delivered with the Quezon City government on SUP regulations, environmental impacts, and penalties for non-compliance. 26 vendors signed a commitment pledge.	Information, Rules & Regulations
A2. 'Strawless Mondays' Initiative	A one-day per week ban on providing straws, supported by banners and posters. Three vendors participated. Monday was chosen due to lower foot traffic, making it ideal for a pilot run.	Rules & Regulations, Information, Social Influence
A3. 'Straw Upon Request' Policy	Four partner vendors kept straws hidden from view, providing them only when explicitly requested by a customer. This intervention aimed to reduce overall straw consumption by shifting default practices around the unnecessary use of straws.	Choice Architecture, Social Influence
A4. Dissemination of Information, education and communication materials on Bring Your Own (BYO), Clean as you Go (CLAYGO) and waste segregation practices	Partner vendors displayed Bring Your Own (BYO) posters on their kiosks, while Clean As You Go (CLAYGO) reminders were affixed to dining tables to prompt customers to clear their own waste after eating. Drinking fountain signage and segregation posters were also added.	Information
A5. Improvement of segregation bins and labels for proper waste segregation	Upgraded 20 waste sorting bins with colour-coded labels, illustrations, and a pedal opening system. A blue bin was added to separate PET bottles.	Information Choice architecture
A6. Seminar on waste segregation, recovery, recycling, and disposal for housekeeping staff	Training on waste segregation and recovery emphasised the opportunity to earn additional income from selling recyclables.  Six of seven staff members participated.	Information

## Application of behavioural levers

To influence behaviours across the food hub, four behaviour change levers were strategically applied: information, rules and regulations, social influences, choice architecture, and material incentives.

**Information:** Delivered seminars for vendors and housekeeping staff, developed information, education and communication materials such as Bring Your Own (BYO), Clean as you Go (CLAYGO) and Segregate posters, and improved colour-coded bin labels to guide proper waste disposal. Drinking fountain signage was also added. The seminars for housekeeping staff highlighted crucial information on the possibility to earn additional income from selling recyclables, indirectly offering a material incentive encouraging waste segregation and recovery efforts.

**Rules and regulations:** Quezon City plastic ban ordinances and the introduction of "Strawless Mondays."

**Choice architecture:** Interventions modified the physical environment placing straws out of sight under a "straw upon request" policy. Waste stations in the food center were redesigned and standardised by colour, with the addition of a dedicated bin for plastic bottles, helping both customers and staff sort waste.

**Social influence:** Public commitment through a vendor handprint pledge, "Strawless Mondays", and sustainability signage helped normalise strawless behaviour.

## Monitoring and evaluation

The project monitored progress in reducing plastic waste at UP Diliman through indicators capturing behavioural practices, waste management outcomes, and stakeholder attitudes. Data were gathered using a mix of quantitative, qualitative, and observational methods throughout the intervention period.



Theory of Change	Indicators
Objective	Number of plastic foodwares used daily Recovery rate of plastic recyclables
Behaviour	Vendors: Percentage adopting non-plastic alternatives Customers: Percentage using BYO containers; percentage properly segregating waste Housekeeping: Percentage of staff regularly segregating and recovering recyclables
Psychosocial State	Surveys measured vendors' sense of compulsion to avoid SUPs Customers' sense of responsibility, and staff motivation
Activity	Seminar attendance, number of pledges signed, participation rates in straw initiatives, and visibility of IEC materials.

### Reflections and challenges

The M&E framework served not only as a monitoring tool but also as a learning tool, helping document adaptations to inform future behaviour change interventions. It provided a structured approach to defining objectives, behaviours, and activities, while the theory of change clarified the links between interventions and long-term outcomes. However, measuring behavioural and psychosocial indicators proved more complex than tracking activities, particularly when relying on vendors for data collection amid high staff turnover. Future applications should streamline indicators, strengthen data collection processes, and support more consistent reflective journaling throughout the intervention cycle.

## Implementation results and analysis

### Plastic reduction impact:

- 9.28% reduction in daily plastic utensil usage and a 63.97% reduction in plastic straw consumption based on data from 19 stores.
- Plastic recyclables recovery rate increased from an initial 0% to an average of 63.39% per day.

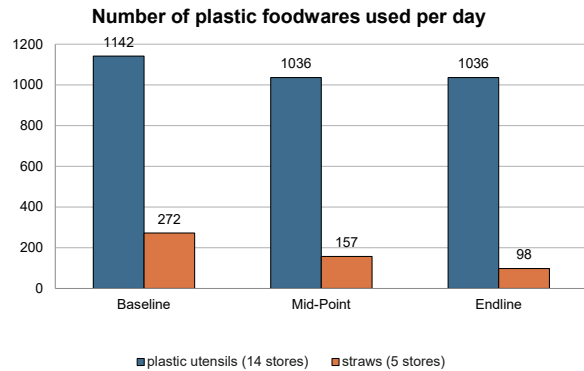
### Behavioural and psychosocial outcomes:

- Vendors: The percentage of vendors adopting non-plastic alternatives increased from 82.1% to 93.2% after the seminar.



- Customers: The rate of customers avoiding plastic packaging/foodware increased from 16.4% to 24.61%. Customers consistently and correctly segregating waste rose from 33.69% to 56.92%.
- Housekeeping staff: The percentage of staff consistently recovering recyclables increased from 16.7% to 100% after the seminar. This was supported by the improved segregation stations, including a blue bin for plastic bottles

Housekeeping staff responded most positively to the interventions. The upgraded segregation stations, clearer labels, and the new PET bottle bin significantly reduced their workload and made waste sorting easier. The seminar reinforced their understanding of the environmental and economic value of segregation, while the opportunity to earn income from selling recyclables became a strong motivator. As a result, their commitment and consistency in recovering recyclables significantly increased. They noted, however, the need for more storage space, protective gloves, and continued customer compliance.



Vendors showed mixed but generally improving engagement. Many adopted non-plastic alternatives after the seminar and demonstrated willingness to support initiatives such as BYO posters. Challenges included low vendor compliance and motivation due to cost and durability concerns, difficulty sustaining straw reduction policies, inconsistency from staff turnover, and the limited reach of the "Bring Your Own" campaign. Although material incentives could encourage broader "Bring Your Own" uptake, decisions on discounts or rewards lie solely with store owners. The lack of stricter enforcement of city ordinances and infrastructure limitations (washing areas, storage) were also barriers. "Strawless Mondays" was challenging for beverage vendors reliant on straws, while the "Straw Upon Request" policy was more acceptable and easier to implement. Sustaining these practices proved difficult when customers frequently requested straws.



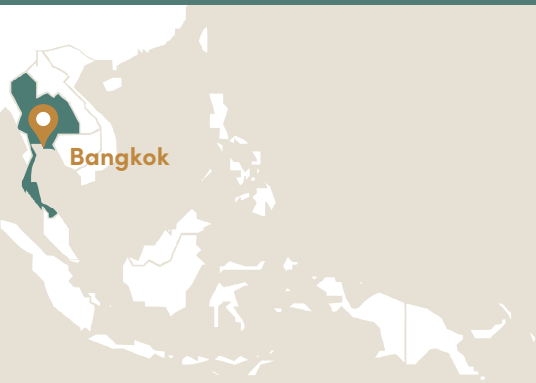
Customers reacted positively to improvements that clarified or simplified desired behaviours. Enhanced bin labels, signage, and the tray return station made segregation easier, leading to more mindful disposal and a substantial increase in correct segregation. Straw-related initiatives were generally accepted, but their adoption depended strongly on the vendors and the types of beverages they consumed. For the 'Bring Your Own' campaign, customers expressed the need for higher incentives and greater accessibility, especially for persons with disabilities, to overcome inconvenience and strengthen long-term participation. Overall, the reach of communication was limited, with low recall rates among consumers and limited uptake on social media. Despite limitations, most customers supported the continuation of plastic-reduction initiatives and expressed appreciation for the improved waste management system.



**Danica Miralles**  
(housekeeping staff, GyudFood)

We learned about waste segregation, and we also discovered that there's actually money to be made from trash. Sometimes, we divide what we earn among ourselves, and other times we use it to buy snacks.

# Thailand



## Unboxing sustainable clothing consumption: changing sportswear habits at Chulalongkorn University

The pilot led by Chulalongkorn University was focused on initiating systemic changes to reduce unsustainable clothing consumption and encourage sustainable waste management practices among students.

It centred its interventions around a major annual event as a case study: the CU-TU Traditional Football event, one of Thailand’s oldest university sporting traditions, celebrated for more than 70 years. Each year, the event attracts thousands of students and alumni to Bangkok’s National Stadium and generates considerable resource use. The event shirts are produced in distinctive colours representing the two competing universities: pink for Chulalongkorn University and yellow for Thammasat University. Wearing these shirts allows students and alumni to visibly express their affiliation and school spirit, making the shirts not only functional apparel but also powerful cultural symbols.



<b>Objective</b>	<p>Reduce unnecessary clothing consumption by encouraging individuals to reconsider the necessity of new purchases.</p> <p>Promote the extended use of existing shirts, particularly those made from synthetic fibres, by highlighting their durability and the negative environmental impacts of improper disposal.</p>
<b>Location</b>	Chulalongkorn University in Bangkok, Thailand
<b>Target group</b>	Chulalongkorn students who joined CU-TU traditional football event
<b>Baseline behaviour</b>	Each year several thousands of new 100% synthetic fibre shirts are produced for the football event and these shirts are often worn only once or a few times before disposal, contributing to textile waste and microplastic pollution.

### Behaviour change intervention

The project was designed to address unsustainable consumption and disposal of synthetic (plastic-based) fibre sportswear, specifically the T-shirts produced annually for the CU-TU Traditional Football event at Chulalongkorn University. While the initial plan was to engage shirt producers in the intervention, direct collaboration proved unfeasible. As a result, the interventions were adapted to focus on encouraging re-wearing behaviour, mindful clothing consumption and discouraging improper disposal of unwanted clothing.

The intervention was implemented across two phases to shift both awareness and everyday practices.



**Phase I** (February–March 2025): Understanding apparel consumption behaviours and motivating change  
 Activities included a baseline questionnaire and an "Unbox Talk Workshop" (March 27, 2025), which introduced students to the impacts of fast fashion, microplastic pollution, and fibre types. The introduction of a Donation Box with Cashback offered an alternative disposal method for unwanted garments.

**Phase II** (June–August 2025): Reinforcing re-wearing behaviour

A closed online group of volunteering students from Phase I reinforced and monitored re-wear behaviours by encouraging students to share photos of themselves re-wearing their football shirts in various settings.

**Interventions**

Activities	Description	Behaviour levers
A1. Donation box for old clothes in exchange with cashback	Donation boxes for old clothes were installed in several high-traffic locations across campus and during events. They provided an alternative way to dispose of old clothing and offered a cashback reward upon donation.	Choice Architecture Material Incentives
A2. Talk show event	Provision of information about textiles, their environmental impacts, and proper maintenance method  Brainstorming about impacts of changes in the apparel industry on stakeholders  25 students joined the talk show	Information Emotional Appeals Social Influence
A3. Closed group chat to encourage t-shirt re-wear	30 students joined a closed group which encouraged to rewear clothes in innovative ways instead of purchasing new clothing items	Social Influence Information Emotional Appeals

**Application of behavioural levers**

The project implementation design combined physical environmental changes with motivational and informational activities. This layered approach was critical in securing student participation in the project activities.

**Information:** Following a student-led awareness talk on microplastic fibres and clothing care symbols, information materials were created and disseminated by participating students to share facts and case studies about the impacts of garment consumption, particularly microplastic pollution and fast fashion issues. This was found to be highly impactful, as students could easily relate this information to their own habits.

**Social influence:** Leveraged peer behaviour and community norms in a closed group chat encouraging re-wearing during Phase II. When one student posted a photo re-wearing the CU-TU shirt, others followed, creating a "ripple effect in shaping collective norms".

**Emotional appeal:** Disseminated information materials connected actions to environmental consequences and positioned sustainable consumption as a way of "honouring university traditions while reducing environmental harm". Practical guidance on garment care and re-styling strategies was delivered through short, visually engaging social media content in ways that felt fun and achievable.

**Choice Architecture:** A Donation Box with Cashback for old apparel was installed in several high-traffic locations across campus and during events. The box served as a visible reminder for students not to discard their clothes in the general waste and helped bridge their awareness with practical action.

**Material incentives:** The Donation Box’s Cashback feature offered a small financial incentive, by encouraging students to return unwanted pieces of clothing for recycling instead of discarding them and completing a questionnaire on fashion’s sustainable impacts. The cashback initiative rewarded questionnaire responses with 20THB and both questionnaire response and clothes donation with 50THB. Unwanted clothes donated to the box were recycled into various items, including key chains and luggage tags in school colours, which were then distributed to participants.

**Monitoring and evaluation**

The Monitoring and Evaluation (M&E) framework applied a set of indicators across four key areas to assess progress toward the project’s behavioural objectives:



Theory of Change	Indicators
Objective	Reduction of new purchases of clothing items made of polyester. Reduction of clothing items and weights sent to landfill (estimated from donated clothes)
Behaviour	Self-reported frequency of re-wearing the CU-TU shirt, monitored within the closed group chat. Self-reported changes in garment care, disposal, and purchasing intentions (pre-post survey). Quantity of unwanted apparel diverted to donation boxes instead of being discarded.
Psychosocial State	Awareness of environmental impacts of polyester fibres, microplastic pollution, and fast fashion. Self-reported intention to donate/resell/upcycle clothes, against disposing to go to landfill. Attitudes toward responsible consumption and extended garment use. Perceived social norms, such as whether peers consider re-wearing acceptable or desirable.
Activity	Participation rates in the Unbox Talk workshop and Phase II monitoring group. Engagement with behavioural prompts, such as posting weekly re-wearing photos. Visibility of communication materials and donation boxes.

## Reflections and challenges

The M&E framework helped structure the project and ensure that activities were logically aligned with behavioural objectives, particularly through its focus on indicators and data collection. It also supported a shared understanding among team members by clarifying what data was needed. However, the team found some sections related to psychosocial states difficult to interpret or complete and noted that the rigid structure sometimes made it challenging to capture details meaningfully. Adapting the project to unexpected changes also required frequent revisiting of the interventions, which the framework did not fully support. The team suggested adding clearer guidance on psychosocial indicators and incorporating features that allow for tracking progress and documenting adjustments during implementation.

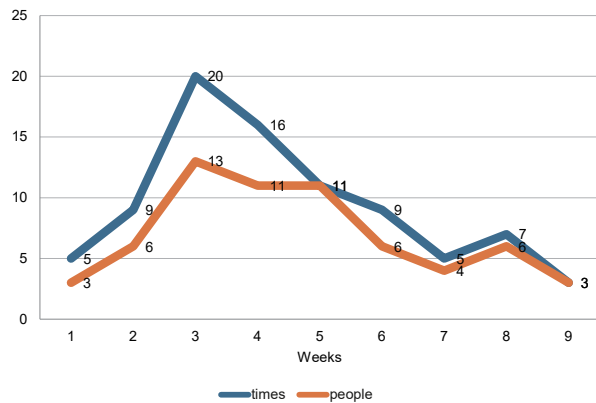
## Implementation results and analysis

The project successfully initiated positive shifts in consumer behaviour towards synthetic fibre sportswear, focusing on CU-TU Traditional Football T-shirts.

### Plastic reduction outcomes:

The project measured its impact by tracking the frequency of re-wearing synthetic fibre T-shirts among participants during the nine-week Phase II (June–August 2025). Re-wearing peaked in Week 3, with 20 instances among 13 participants, demonstrating strong initial adoption. Although engagement gradually declined, a core group of 3–6 students continued re-wearing their shirts 3–7 times per week until the final week, suggesting emerging habit formation. Overall, 57% of the 30 participants reported re-wearing their shirts. Additionally, 908 garments (131.74 kg) were collected through donation boxes and diverted from landfill for recycling.

Chula football t-shirt re-wearing timeline (self-reported)



### Behavioural and psychosocial outcomes:

The intervention increased awareness of fast fashion impacts and encouraged more mindful purchasing decisions among participants. Students reported greater consideration of environmental impacts and fibre types when buying clothing. Behavioural shifts were also observed in increased re-wearing of garments, supported by strong social influence dynamics. When participants shared photos of themselves re-wearing the shirts online, others followed, creating a ripple effect that helped normalise the behaviour within the student community.

However, the project faced recruitment and retention challenges, partly due to the semester break, which limited engagement and opportunities for re-wearing. Some students were hesitant to post photos due to shyness. Participation in the clothing donation scheme was also lower than expected because many students did not have garments ready to donate, the cashback incentive was perceived as modest, and the incentive was not communicated in advance. Opening the donation boxes to the wider campus community helped address these barriers, increasing both visibility and the volume of garments collected.



Plastic pollution is not a waste problem, it is a design problem.



The future of fashion lies not in producing more, but in rethinking what already exists.

# Viet Nam

## Nopa Move: the smart bottle that rewards reuse

Launched in 2024, Nopa Move tackles plastic pollution by making reusable bottles part of Ho Chi Minh City commuters' daily routines. The system combines a locally-designed customisable bottle, a network of 99 partner cafés offering rewards across eight city districts, and NFC technology that lets users track their impact and discover participating locations.



<b>Objective</b>	Increasing the number of commuters who adopt reusable bottles and increasing the frequency of reuse among adopters
<b>Location</b>	99 café partners in Ho Chi Minh City
<b>Target group</b>	Urban professionals and students in Ho Chi Minh City who have made takeaway beverage purchases a daily routine rather than an occasional convenience
<b>Baseline behaviour</b>	Commuters typically buy two to three drinks per day, often spending more on coffee, matcha, milk tea, or juice than on meals. Convenience and hygiene perceptions keep disposables as the default choice, with branded cups functioning as status symbols and social markers, particularly among aspirational F&B chains. At the same time, Vietnamese consumers demonstrate strong responsiveness to key motivators such as discounts, gamification, and customisation opportunities.

## Behaviour change intervention

Nopa Move aims to reduce single-use plastic waste in Ho Chi Minh City by embedding reusable bottle practices into daily commuter routines. The project specifically targets takeaway beverage containers (cups, lids, straws, and bags), which represent the single largest contributor to plastic pollution in Vietnam's waterways (44% of waste collected). By preventing approximately 10 grams of plastic waste per reuse, the initiative supports Vietnam's national goals to reduce marine plastic litter by 50% by 2025 and ban certain single-use plastics in urban areas.

The intervention seeks to transform reuse from an occasional, effortful pro-environmental action into an automatic, habitual behaviour. It focuses on two key dimensions: increasing the number of commuters who adopt reusable bottles and increasing the frequency of reuse among adopters. By leveraging habit anchors at predictable consumption moments (morning commute, lunch break, afternoon refreshment) and combining incentives through 99 partner cafés, NFC tracking technology, and a customisable bottle design, the project aims to achieve durable, consistent behaviour change rather than temporary symbolic action.

## Interventions

Activities	Description	Behaviour levers
A1. Customisable reusable bottle	Modular bottle designed to evoke positive emotions and a sense of ownership	Emotional appeals
A2. Café reward network (99 partners)	Reusing the bottle unlocks tangible benefits such as discounts, upsizes, or exclusive perks at partner cafes	Material incentives
A3. NFC-enabled usage checks and discoverability	NFC-enabled recognition mechanism reduces friction through a simple tap with a smartphone	Choice architecture Social influence
A4. Positive communication and engagement activities	Rewarding and aspirational messaging approach Targeted social media campaigns University challenges, events	Information Emotional appeals

## Application of behavioural levers

The intervention applies a set of behavioural levers, which emphasises shifting the environments, motivations, and social norms that shape everyday actions.

**Emotional appeals:** The Nopa Move bottle is designed to evoke positive emotions and a sense of ownership. Its modularity, translucent body, and customisable features allow users to express their personality and identity. By connecting reuse with identity and pride, the intervention uses emotional appeal to make the bottle something people want to carry and display, not just a functional container.

**Material incentives:** Through a growing network of 99 café partners, Nopa bottle users are rewarded with tangible benefits such as discounts, upsizes, or exclusive perks.

**Social influence:** The bottle's NFC technology enables users to scan and discover partners and rewards, while also providing data for future feedback loops such as streaks, milestones, or leaderboards, leveraging social proof and recognition.

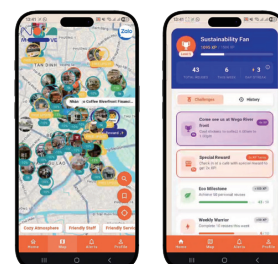
**Choice architecture:** The intervention was designed to reduce barriers and friction, ensuring that reuse is the simplest and most intuitive option. No dedicated app is required, any smartphone can scan the NFC tag, and the partner café requires minimal additional effort from staff (just a login on their phone).

**Information provision:** Messaging around the bottle adopts a positive framing, highlighting convenience, savings and personal expression, rather than relying on guilt or shame-based messaging. Aligning reuse behaviour with users' lifestyle aspirations reduces psychological resistance and supports internal motivation, helping users see reuse as a desirable and self-reinforcing choice.

Together, these levers are chosen to foster both the adoption and reinforcement of reuse behaviour, ensuring that Nopa Move is not simply offering an alternative product but reshaping the behavioural ecosystem that makes reuse socially desirable, rewarding, and easy to repeat.

## Monitoring and evaluation

The Nopa Move project initially planned to monitor their intervention using 18 different indicators categorised into four main areas: overall objective indicators, behaviour change indicators, partner implementation indicators, and psychosocial indicators. However, tracking all 18 indicators quickly proved unsustainable for the team, with many feeling "force-fit". Consequently, they narrowed their focus to a few core metrics that directly captured the behavioural process.



Theory of Change	Indicators
Objective	Reduction in the number/amount of single-use plastic waste from takeaway drinks, bolstered by increased reuse literacy and culture in urban Viet Nam shown from the awareness survey.
Behaviour	Whether users consistently reuse their Nopa Move bottle at cafes; Whether users track, share, and sustain their reuse streaks; and Whether reuse becomes a habitual and socially visible behaviour
Psychosocial State	Reuse felt easy, cool, and part of their daily life; Users feel seen, rewarded, and recognised for reuse; Users identify with a “reuse club” cultures; and Users feel reuse is normalised. Qualitative data to monitor these indicators were collected through user quotes, feedback, and ad hoc surveys.
Activity	The number of reuse actions taken (NFC scans at partner locations; user check-ins); The number of registered Nopa Move members; Assessing user response to the rewards and discounts; and Assessing how well users understood and valued the Nopa Move service and its rewards

### Reflections and challenges

The M&E framework proved valuable for structuring indicators and linking activities to psychosocial states, forcing clear articulation of how interventions shift attitudes and habits. The diary component captured useful day-to-day insights. However, implementation revealed significant limitations. Tracking the initially planned 18 indicators proved unsustainable, with many feeling "force-fit." The team eventually focused on a few behavioural indicators such as reuse actions, motivations, and service valuation, while monitoring psychosocial states remained difficult to quantify given the small user base. Key data collection challenges included low café check-ins due to a lack of staff incentives, high staff turnover undermining training, and insufficient survey responses for quantitative evidence. The resulting dataset feels more like a baseline than a full monitoring cycle. While monitoring confirmed active bottle reuse across contexts, precise quantification remains limited. The NFC component proved most valuable to increase the service’s discoverability. Finally, early evidence highlights that rewards, design appeal, and social belonging as key motivators to reuse the bottle.



## Implementation results and analysis

### Plastic reduction outcomes:

Over the project implementation period, 938 bottles had been distributed through consignment, direct sales, and sponsored gifts. Each reuse (200 vendor NFC scans and more than 2,000 user check-ins) is estimated to avoid around 10 grams of plastic waste (cup + lid + straw + handle).

### Behavioural and psychosocial outcomes:

Over the project period, cafes partnering with the Nopa initiative expanded from 42 to over 110 partners, including large cafe chains.

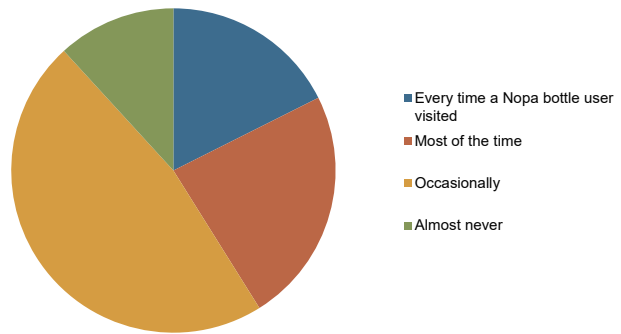
Across the 938 bottles in circulation, around 2,080 bottle scans have been logged (as of October 2025). These scans are primarily used by consumers to discover partner cafés and rewards. By contrast, partner-side check-ins remain very low (around 200 across two months), despite training all 110+ partners. This discrepancy underscores a key learning: NFC in its current form functions more effectively as a discoverability and engagement tool than as a verification mechanism.

Qualitative observation confirms that lower check-ins do not necessarily reflect lower reuse, but rather inconsistent staff engagement with the check-in process. According to a partner and staff survey, while nearly all café staff received training on the Nopa check-in process, many reported feeling only “somewhat confident and occasionally confused” (47% out of 17 responses) when executing it. This helps explain why, despite training across 54 partners, check-ins remained occasional (47% out of 17 responses) for a majority of respondents.

However, the frequency of reuse remains difficult to measure. It is likely that many Nopa Move bottles are reused for water refills at home, at work or at non-partner outlets, which means that current data only captures a portion of the total reuse events and therefore underestimates the actual plastic reduction impact.

Since the NFC-enabled bottle launch in May 2025, Nopa Move has fundamentally shifted user perception from a reusable container to a membership tool providing café network access. The bottle has evolved from being viewed as simply a well-designed reusable container to being understood as a membership tool providing access to a partner café network. Users now actively choose cafés based on Nopa rewards to discover new shops, evidenced by growing “check-in complaints,” social media engagement combining savings with exploration, and expansion requests from other cities. Users report feeling part of an “exclusive club” where counter recognition confirms belonging, with customisation as the initial hook and rewards providing rational justification. Different segments respond distinctly: students prioritise discounts, professionals seek identity expression, locals focus on reward value, expats emphasise sustainability.

Frequency of Nopa user check-ins by stores in the past month (n = 17)



That feeling when you bring the bottle to the counter and the staff just know and give you a discount feels so great 😊, like you're part of some exclusive club.

# Part 4

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## Discussion & Key Lessons

The six pilots reviewed in Part III utilised various behavioural levers to influence the psychosocial status in different settings, including school campuses, classrooms, tourist sites, and events, yielding diverse outcomes and learnings. With a view toward future practice and scaling, this section synthesises cross-cutting insights from the pilots. It examines successful outcomes, surprising results, common challenges, and identifies strategic priorities for scaling-out, scaling-up, and scaling-deep across ASEAN.

# 1. Synthesis of findings from six pilots

## Plastic reduction impacts

The pilots achieved diverse and measurable plastic reduction outcomes. While some interventions resulted in immediate, quantifiable decreases in single-use plastics, others laid the groundwork for long-term waste prevention by successfully introducing reusable alternatives and improving waste recovery rates.

Pilot location	Target item	Measurable impact
Indonesia	Straws & bags	80% straw reduction; 50% plastic bag reduction
Philippines	Straws & waste recovery	63.97% straw reduction; 63.39% waste recovery rate
Cambodia	Reusable bottles	45% increase in reusable tumbler adoption (28% to 73%)
Thailand	Synthetic fibers	131.74 kg (908 pieces) of textile waste diverted
Lao PDR	Rental cups	11.8% return rate; 13 cafés integrated into circular system
Viet Nam	Reusable bottles	2,080 NFC scans; 10g plastic saved per reuse

While the pilots generated rich behavioural insights, the monitoring approach did not allow for full comparability across interventions or countries. Differences in local contexts, intervention designs, data collection tools, and implementation capacity meant that results could not be standardised or directly compared. In several cases, plastic reduction outcomes could not be measured through direct waste measurements and instead had to be estimated using proxy indicators, such as reuse frequency (e.g. reductions in single-use cups), the number of items donated or recovered (e.g. diverted textile fibres from landfill), and self-reported behavioural changes captured through surveys, interviews, or participant reflections. While these proxies provide credible and context-appropriate indications of direction and magnitude of change, they also introduce uncertainty and limit the precision of impact quantification. These constraints highlight the trade-off between methodological rigour and practical feasibility in real-world behavioural interventions.

At the same time, these constraints underscored the importance of systematically collecting qualitative insights throughout implementation. Regular check-in calls, reflection journals, and documentation of evolving assumptions allowed teams to continuously capture contextual shifts, stakeholder reactions, and implementation challenges. This highlighted the need for future interventions to balance robust monitoring with implementation realities.

## What worked well

Across the six pilot interventions, successful patterns of strategies emerged.

### **Empowering target groups**

Across the pilots, interventions were most effective when target groups were equipped with the necessary capacity, infrastructure, and motivation to adopt new behaviours. Providing clear information, enabling environments, and meaningful incentives created the conditions for social norms to emerge organically. Once empowered, target groups themselves became advocates and informal influencers, reinforcing behaviours within their communities and contributing to the durability of change.

In several cases, this peer-driven dynamic proved more powerful than top-down enforcement. For example, in the Chulalongkorn University (Thailand) pilot, the closed messaging group and peer modelling approach helped normalise re-wearing behaviours among students. Once early adopters began sharing their participation, others followed, demonstrating the strength of horizontal social influence over rule-based imposition. Similarly, in the Indonesian boarding school setting, strong peer influence embedded within daily communal routines enabled plastic reduction behaviours to become part of everyday social norms, without relying on financial incentives or complex technological systems.

### **Embedding behaviour change in locally rooted values**

Rather than framing interventions solely around plastic as an environmental issue, several pilots grounded behaviour change messaging in culturally and socially meaningful values. In the Indonesian boarding school context, plastic reduction was framed not only as an environmental responsibility but also as a reflection of Islamic principles of stewardship and cleanliness. Religious messages were incorporated into banners and aprons worn by vendors, reinforcing the idea that reducing waste was aligned with moral duty and collective responsibility. In Viet Nam, the Nopa bottle evolved into a lifestyle symbol and provided users with the feeling of membership in a reuse community. By embedding the intervention within an existing value system, plastic reduction behaviours resonated with personal identities rather than being externally imposed.

### **Early and sustained communication**

Early and sustained engagement with multiple stakeholders were crucial for success. Rather than introducing interventions in isolation, several pilots invested time in understanding the daily realities, barriers, and motivations of those involved and the current behaviours. By involving core actors before implementation, and engage in deep and active listening, interventions responded/were tailored to local needs, ensured consistent messaging, and fostered shared ownership of the interventions. For example, in the Philippines, collaboration with the Quezon City local government helped align the intervention with existing plastic ban ordinances, while seminars for vendors and housekeeping staff addressed operational concerns and highlighted practical benefits, such as income from recyclables.

In the Cambodian pilot, teachers were trained not only to deliver the kamishibai storytelling but also to adapt it to their classroom context, ensuring that the intervention felt embedded within the school's pedagogical approach rather than externally imposed. In Lao PDR, onboarding sessions and continuous communication with café partners helped anticipate challenges such as staff turnover and clarify roles in the rental cup system.

## Surprises and unexpected results

Several pilots revealed outcomes that challenged initial assumptions about which behavioural levers would be most influential and how behaviour change would unfold in practice.

### **From incentives to identity in the Vietnamese pilot**

In Viet Nam, the limited uptake of the initial rewards-only app for refills highlighted the insufficient impact of a standalone material incentive. The introduction of emotional appeals and social influence through the customisable bottle fundamentally shifted outcomes. Combined with positive communication and community-based engagement, the bottle evolved into a lifestyle accessory and social signal. This produced an unexpected “exclusive club” effect, where reuse was driven as much by identity, pride, and belonging as by financial savings, highlighting the importance of symbolic and social value in sustaining reuse behaviours.

Additionally, the introduction of the NFC chip, which was initially meant to serve primarily as a verification tool, the NFC-enabled bottle proved most powerful as a discoverability mechanism, helping users easily locate participating cafés.

### **Attractive design turning returnable cups into “souvenirs” in the Lao PDR pilot**

In Lao PDR, the return rate of the Rent Your Cup initiative was undermined due to an unintended tension between emotional appeal and system performance. The stainless-steel cups, designed with strong cultural aesthetics, successfully attracted users and generated emotional attachment, but this popularity led many customers to keep the cups as souvenirs rather than return them. As a result, only three customers returned their cups within the 14-day period while the other 107 cups were kept by their users, probably as personal items or souvenirs rather than shared service objects. This signals that while emotional design can drive adoption, it may simultaneously undermine circular return models unless explicitly counterbalanced by stronger return cues, norms, or infrastructure.

### **Unexpected leadership by housekeeping staff in the Philippines pilot**

In the Philippines pilot, housekeeping staff emerged as the most consistent agents of behaviour change—an outcome that was not initially anticipated. Once infrastructure improvements (clearer bin labels, dedicated PET bottle bins) were combined with information and modest material incentives (income from recyclables), staff rapidly achieved near-universal compliance in segregation and recovery. Their sustained performance contrasted with more variable responses from vendors and customers, underscoring that frontline operational actors can deliver significant impact when incentives, workload reduction, and environmental design are well aligned.

### **Storytelling alone to be an insufficient driver of change in the Cambodian pilot**

In the Cambodian experiment, students who attended storytelling sessions alone (Testing 1) showed a lower percentage of tumbler purchases (66.42%) than the control group (73.2%). While this finding was statistically not significant, this suggests that storytelling to children alone did not influence parents at home. It highlighted that direct engagement with parents was essential for influencing purchasing decisions, as the group that received storytelling with a parent showed the highest rate of tumbler uptake. However, their continuous use of the tumbler following the intervention remains to be monitored.

### **Digitally shy Gen Z participants**

In the Chulalongkorn University pilot, many students reported feeling shy about posting photos of themselves re-wearing shirts in the project’s closed group chat, despite being highly connected Gen Z individuals. This initially hindered social influence efforts until project leading students began modelling the behaviour themselves.

### **Difficulty to contain the intervention within a target location and target group.**

In the Indonesian pilot, unexpected spikes in straw usage were recorded on specific days despite the intervention being in place. Further investigation revealed that these increases coincided with visits by elementary school students attending extracurricular scouting activities on campus. As these younger visitors were not part of the primary target group and had not been exposed to the behavioural interventions, they continued to request straws at significantly higher rates than the older students. This finding highlights the challenge of implementing behaviour change interventions in open or shared environments, where non-target populations can dilute or temporarily offset observed impacts.



A Regional Platform for Behaviour-Centred  
Action on Plastic Pollution in ASEAN

*We created the  
problem, we can  
create the solution*

### **The Behavioural Lab: A Regional Platform for Behaviour-Centred Action on Plastic Pollution in ASEAN**

The Behavioural Lab is a regional coalition of organisations working on behaviour change in ASEAN countries, with a primary focus on plastic pollution and closely related sectors.

The Lab serves as a collaborative platform to amplify regional impact and strengthen the integration of behavioural insights into plastic governance.

#### **Key objectives:**

- Promote knowledge exchange and joint learning across public, private, and civil sectors.
- Strengthen inter-organisational collaboration across the ASEAN region to support sustainable behaviour change.
- Co-develop materials to inform and equip policy change, public engagement, and sustainable business models.

As a concrete next step, the Behavioural Lab will release a public Monitoring and Evaluation Framework. This open-access tool will support practitioners, policymakers, and businesses across ASEAN and beyond in designing, implementing, and assessing behaviour-centred plastic reduction initiatives.

**Core members include:** ERIA's Regional Knowledge Centre for Marine Plastic Debris, Institute for Global Environmental Strategies, Rare's Center for Behavior & the Environment, WWF's Plastic Smart Cities initiative, and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

## Challenges for implementation

Several cross-cutting challenges emerged during the implementation of the pilots, highlighting practical barriers related to behaviour change, monitoring systems, and operational constraints.

**Short-lived impacts of information provision through social media campaigns:** In Thailand and (other countries) information materials shared on social media and online groups showed strong impact and engagement in early stages but quickly stagnated. This confirms the importance of continuous information campaigns as a supporting tool but need for real-life interactions to encourage norm and behaviour change.

**Staff turnover and consistency:** High staff turnover especially in the food and beverage service industry undermined training and monitoring efforts. This led to inconsistent rewards application for customers (Viet Nam) and disrupted the consistent enforcement of 'Strawless Mondays' and the 'Straw Upon Request' policies (Philippines). In contrast, the Lao PDR case anticipated this risk more effectively by requiring onboarding training for partner cafés and maintaining ongoing implementation support through continuous communication and guidance.

**Monitoring challenges:** Data collection was often constrained by reliance on self-reporting or partner compliance, limiting precise quantification of impacts. Technology-based tracking systems, such as NFC in Viet Nam, proved highly effective for user discovery and engagement (1,900 scans by users) but were unreliable for verifying actual reuse data (only 200 partner check-ins) due to low staff compliance. In several cases, the monitoring and evaluation framework proved burdensome, requiring simplification to focus on a small number of core behavioural indicators.

**Convenience as a persistent barrier:** Even when attitudes were favourable, target behaviours introduced friction, such as carrying, cleaning, and remembering reusable containers, or returning rental cups, that deterred consistent adoption, contributing to the low adoption rates of BYO initiatives. A similar observation can be made for the donation boxes in Thailand which received limited uptake despite the cashback reward due to the need for students to anticipate the need to prepare their clothes for donation. Additionally, in the Indonesian pilot, external community members and parents expressed unexpected discomfort with the removal of plastic bags, citing that traveling by motorcycle made it difficult to carry items without plastic bags when no immediate alternatives were provided. Without supportive infrastructure, peer encouragement, and timely cues (washing stations, storage space, or visible return points) behaviour change plateaued or regressed.

## Scaling-out, scaling-deep, and scaling-up

As discussed in Part II, scaling can take multiple forms, including geographical expansion (scaling-out), policy influence (scaling-up), and the transformation of relationships, cultural values, and belief systems (scaling-deep) (Moore et al. 2024). Scaling-out has taken place through the replication and expansion of pilot models across new locations and sectors. In Viet Nam, the Nopa Move network expanded from 40 to over 100 partner outlets, with plans to deepen district-level coverage before moving to new cities such as Hanoi. In Lao PDR, Equinox Laos' Rent-Your-Cup system increased café participation and launched operations in Luang Prabang and Vang Vieng, two key urban areas for the hospitality sector in Laos. In Thailand, student-led textile initiatives are being extended university-wide, demonstrating diffusion beyond the initial intervention group.

Scaling-deep by fostering peer influence, identity formation, and social norm shifts, several interventions moved beyond transactional behaviour change. In Indonesia's boarding school context, anti-plastic norms became embedded in daily routines through strong peer dynamics. In Thailand, peer modelling within student networks strengthened re-wearing practices. In Viet Nam, reuse evolved into a lifestyle signal linked to belonging and identity rather than purely financial incentives. These deeper cultural and relational shifts increase the likelihood that behaviour change persists even when project support is reduced.

Scaling-up is carried out by embedding behaviour change approaches into policy frameworks and regulatory environments. In the Philippines, alignment with Quezon City's plastic ban ordinances and growing partnership with the municipal government with the Mayor awarded Champion of the Earth by the United Nations Environment Programme (UNEP) in 2023, acknowledging the city's efforts to tackle plastic pollution, through banned single-use plastics, promoted refill stations for daily essentials and launched a programme offering residents cash for their garbage. In Indonesia and Cambodia, the findings highlighted the importance of integrating behaviour change approaches to school policies and curriculum, while engaging with household decision-makers. In Viet Nam, partnerships with major coffee chains and engagement with municipal stakeholders.

## Key gaps

Based on the reports from the six pilot cases, several critical gaps in policy, enforcement, public understanding, and infrastructure were identified. These gaps often served as the primary barriers to achieving higher rates of plastic reduction.

### Policy and enforcement gaps

Several pilot cases revealed a disconnect between existing regulations and their practical enforcement on the ground.

In the Philippines, Quezon City ordinances banning single-use plastics (SUPs) were in place, yet enforcement remained weak. No consistent warnings or fines were issued during the project period. Vendors reported that compliance would improve if government agencies were visibly involved in monitoring and communication. In the absence of enforcement, businesses perceived that sustainability responsibilities were being shifted onto them without institutional backing.

In Indonesia, the boarding school could regulate student behaviour internally but lacked authority over external visitors (e.g., parents) and surrounding vendors. Without broader regulatory alignment, plastics continued entering the campus system.

These findings suggest that regulations alone are insufficient without consistent enforcement, clear mandates, and coordination across governance levels.

### Communication gaps

Another recurring barrier was the lack of communication between policymakers, management, and frontline actors.

In the Philippines, cleaning staff were initially unaware of existing financial recovery incentives for selling recyclables. Once informed through a targeted seminar, recovery rates increased dramatically. This illustrates that policy instruments may exist formally but remain ineffective without targeted communication to those responsible for implementation.

High staff turnover in Viet Nam and the Philippines created repeated knowledge gaps. New staff were often unaware of project protocols (e.g., NFC check-ins, "straw upon request"), leading to inconsistent implementation. In Viet Nam, NFC technology successfully supported user discovery (1,900 scans), but low staff verification (around 200) limited reliable reuse data collection.

In Lao PDR, low return rates of the rental cup also reflected a misunderstanding of the circular service model, suggesting insufficient communication about how the system worked.

Trust and safety perceptions further complicated implementation. In Lao PDR, customers requested safety certifications for reusable cups. In the Philippines, hygiene concerns limited vendor participation in "Bring Your Own" schemes.

These findings indicate that awareness campaigns must go beyond general environmental messaging and focus on clearly explaining system mechanics, responsibilities, and practical procedures.

## Operational and infrastructural gaps

Some cases highlighted that even when awareness and willingness to change were present, physical and logistical barriers limited behaviour adoption.

In Indonesia, customers travelling by motorcycle struggled to carry boxed food without plastic bags, as affordable alternatives were unavailable. In Viet Nam, limited partner density in outer districts reduced the usability of the reuse network, creating a “convenience gap” for users.

A key insight emerged across pilots: convenience often outweighs environmental motivation. Without friction-reducing infrastructure, behaviour change plateaus or regresses.

Closing these gaps will require stronger enforcement mechanisms, clearer communication to operational actors, continuous onboarding systems with trust-building measures, and investment in enabling infrastructure that makes sustainable choices the easiest option.

## Future research and focus on scaling and policy integration

**Future Research:** There is a real need for an ASEAN-level behavioural policy review to assess the current status and feasibility of systematically integrating behavioural insights into waste reduction policymaking in ASEAN. Do regional, national, and local level waste management strategies address the behavioural drivers of plastic consumption and waste mismanagement? An extended review of the policies in place would support identifying the priority behaviours, enabling conditions, and institutional gaps. It will be critical to identify whether governments view policies targeting plastic reduction as benefiting from behavioural insights, or if the connection has yet to be made. In parallel, a targeted needs assessment of policymakers can be carried out to identify knowledge and capacity gaps and opportunities for strengthening behaviour-centred policy design for plastics.

Furthermore, research should expand beyond urban and educational settings to explore interventions in rural communities, fostering a more holistic understanding of how individual behaviours interact with broader socio-economic and policy-driven factors.

**Scaling from Pilots to Policies:** Scaling successful pilots requires both geographic expansion and institutional replication. For example, replication toolkits can be developed to spread interventions across national networks, such as Indonesia's 42,000 boarding schools. Geographic scaling could pursue deliberate, city-by-city expansions, such as extending reusable networks to new urban centres and tourist hubs like Hanoi, Luang Prabang, or Bangkok. To support these and other efforts, organisations such as the newly established Behaviour Lab – a regional coalition of organisations working to address plastic consumption and waste behaviours – can promote cross-sector knowledge exchange, foster inter-organisational collaboration, and launch practical tools such as an open-access Monitoring and Evaluation (M&E) framework for regional practitioners and policymakers.

**Policy Development and Integration:** Achieving systemic impact requires scaling up by actively embedding behavioural insights into regulatory and infrastructural frameworks. Key areas for policy development and support include:

**Enforcement and economic levelling:** Local and national governments must monitor and enforce existing single-use plastic bans and waste management regulations consistently and credibly. Households and businesses benefit from a stable and transparent enforcement environment, ensuring that compliance is the path of least resistance. Concurrently, policymakers should offer financial incentives, subsidies, or regulatory backing to help local circular business models compete fairly against ultra-cheap, imported disposable plastics.

**Establishing reuse standards:** To confidently guide the transition for the food and beverage, hospitality, and tourism sectors, governments need to establish clear operational standards for reusable items, including official hygiene requirements, standardised cleaning processes, and material safety certifications.

**Enabling infrastructure:** Municipal authorities should integrate reuse systems directly into local waste reduction plans, such as permitting highly visible and conveniently located return points for reusable items in public spaces like parks, markets, and transport hubs to normalise reuse as a shared community practice.

**Curriculum integration:** Educational policies should formally embed behavioural tools, such as environmental storytelling, into early childhood and primary education curricula to foster intergenerational knowledge transfer and long-term cultural shifts toward less consumption of plastics and smarter management of plastic waste flows.

Ultimately, data generated from behaviourally-informed interventions can provide policymakers with valuable insights into consumer and business behaviours, helping to refine and validate national sustainability strategies without acting as a mandatory compliance tool.

## 2. Conclusion

Plastic pollution in Southeast Asia is fundamentally a behavioural challenge, not merely a waste management issue. While many ASEAN countries have made significant progress through traditional regulatory tools like single-use plastic bans, extended producer responsibility (EPR) schemes, and awareness campaigns, Phase II of the project confirms that these measures alone are insufficient to shift deeply ingrained consumption habits. To effectively close the intention-action gap, it is necessary to redesign everyday decision-making environments so that sustainable choices become easier, more attractive, and socially reinforced.

The Phase II pilots successfully demonstrated that integrating multiple behavioural levers – such as choice architecture, social influence, emotional appeals, and material incentives – can generate measurable shifts in plastic consumption and waste management practices. However, the effectiveness of these interventions is highly context-dependent. For example, financial incentives were often weaker than feelings of identity, belonging, and peer norms, as seen in Viet Nam and Thailand. Cultural and religious framing proved highly powerful in shaping collective norms in Indonesia, while frontline staff emerged as vital change agents in the Philippines when provided with aligned infrastructure and incentives. Conversely, beautifully designed reuse systems in Lao PDR struggled to circulate when return mechanisms were not equally robust, and educational storytelling for children in Cambodia required direct parent engagement to successfully influence household purchasing decisions.

A major innovation of Phase II was the implementation of a psychosocial Monitoring and Evaluation framework, which strategically shifted the project's focus from merely tracking activities to deeply understanding underlying behavioural drivers. Although applying this framework in real-world, fast-paced settings revealed a constant trade-off between methodological rigor and practical feasibility, it significantly strengthened diagnostic thinking and adaptive management. This innovative approach has laid a crucial foundation for designing more scalable and behaviour-centered policy interventions.

Looking ahead to Phase III, the priority must shift from simply replicating isolated pilots to systematically integrating behavioural insights into broader institutional practices and policy frameworks. Key next steps include conducting an ASEAN-level behavioural policy review to assess the feasibility of embedding behavioural insights into regional, national, and local waste management strategies, and to identify critical institutional gaps. Concurrently, conducting a targeted needs assessment of policymakers will help evaluate their current capacities in behavioural science, ultimately supporting harmonised guidance and coordinated capacity-building for lasting, systemic change.

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**Prepared by:**

**Institute for Global Environmental Strategies**

2108-11 Kamiyamaguchi, Hayama, Kanagawa 240-0115, Japan

Tel: +81-46-855-3700

Fax: +81-46-855-3709

**Supervised by:**

**Regional Knowledge Centre for Marine Plastic Debris (RKC-MPD),  
Economic Research Institute for ASEAN and East Asia (ERIA)**

Sentral Senayan II 6th Floor

Jalan Asia Afrika No. 8

Gelora Bung Karno, Senayan

Jakarta Pusat 10270, Indonesia

Tel: +62-21-5797-4460

Fax: +62-21-5797-4463