

Turning the tide

People, Policy and progress
through PLEASE



PLEASE Project
Plastic Free Rivers and Seas for South Asia



WORLD BANK GROUP

Acknowledgement & Disclaimers

Acknowledgement

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Disclaimer

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Forward



This publication highlights our collective commitment to advancing plastic waste management and promoting a circular economy in South Asia through the Plastic Free Rivers and Seas for South Asia (PLEASE) project. The initiative proves that environmental protection, economic growth, and improved livelihoods can go hand in hand when governments, businesses, and communities work together.

Across the region, the impact is already visible. Enhanced waste collection systems and upgraded recycling facilities are paving the way for the future of inclusive plastic waste management. Meanwhile, supportive resource management policies support sustainable practices, while reuse and recovery initiatives are creating new green jobs and economic opportunities. These impactful results show that sustainable growth is within reach, through innovation and collaboration.

Norbu Wanchuk

Director General

The South Asia Co-operative Environment
Programme (SACEP)

The journey towards a plastic-waste-free world is long, yet the PLEASE project shows that the progress is not only possible, but achievable. By transforming plastic waste from a burden to a valuable resource, South Asia is taking decisive steps towards a cleaner and more resilient future. Still, the plastic pollution crisis knows no borders. Protecting our rivers and seas demand continued partnership, investment in innovative solutions, and expanded material circulation systems that keep waste out of our environment.

Looking ahead, our path is clear. By building on the successes we have achieved together, we can accelerate the transition to a circular economy that benefits both people and the planet. Let us carry forward this momentum with confidence, knowing that every step taken together secures our South Asia region closer to a cleaner, healthier, and more hopeful future.

PLEASE project at a glance



Context

Home to roughly a quarter of the world's population, South Asia is one of the fastest-growing regions on the planet, and one of its most plastic-polluted. Rising consumer demand, overstretched recycling systems, and weak waste management have pushed vast quantities of plastic into the region's rivers and coastlines, threatening marine ecosystems, fisheries, and millions of coastal livelihoods.

But the region's challenges are also its opportunities. South Asia's deep-rooted reuse culture, large labor force, and growing markets for recycled materials create fertile ground for innovation. Through collaboration, policy alignment, and technology sharing, the region can harness circular economy principles to reduce pollution, create jobs, and build long-term resilience.

About the PLEASE Project

The Plastic Free Rivers and Seas for South Asia (PLEASE) project is a landmark regional initiative tackling plastic pollution head-on. Implemented by the South Asia Cooperative Environment Programme (SACEP), funded by the World Bank, and supported by UNOPS, the five-year project (2020–2025) has mobilized USD 37 million across all eight SACEP member states: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

PLEASE drives change through three interlocked components:

1. **Competitive grants** to test and scale plastic waste reduction solutions
2. **Public-private engagement** to align industry, government, and civil society
3. **Regional policy integration** to strengthen institutions and share knowledge across borders

Guided by the AIR framework (Avoid, Intercept, Redesign) the project works with 12 Regional Block Grantees and 16 Innovation Grantees to introduce new technologies, policies, and approaches where they're needed most.

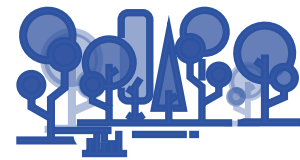
By May 2026, PLEASE had partnered with **28 grantees**, managed **16,000 MT** of plastic waste, and reached over **11 million people** across South Asia.

South Asia Acts: A Region Transformed



15m kgs

Plastic recovered



1.6m kgs

Plastic recycled

246,050

People reached in
Mitigation of plastic
pollution

9,406

Informal waste workers
supported

862

Decent jobs created



2695

Individuals provided
with business
development support



351

Women
organisations
empowered



20

Material recovery
facilities established



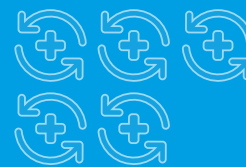
12

Material recovery
facilities strengthened



8

Recycling
facilities
established



5

Recycling
facilities
strengthened

A person is seen from behind, wearing a blue long-sleeved shirt with a circular logo that reads 'eco WASTE SOLUTION'. They are sorting through a massive pile of discarded plastic waste, including numerous clear plastic bottles, some with labels like 'asian paints' and 'B-2'. The entire scene is overlaid with a semi-transparent blue filter.

The Landscape: Understanding South Asia's Plastic Challenge

Bangladesh



Bangladesh made history in 2002 as the first country in the world to ban single-use plastic bags, yet decades later, the crisis has only deepened. With a population over 170 million people, Dhaka collects only 646 tons of plastic waste daily, a mere 10% of what the country generates and only 37% of plastic is recycled nationally. The rest chokes landfills, rivers, and coastal waterways, ranking Bangladesh among the top 20 global contributors to mismanaged plastic waste. The burden of recovery falls largely on informal waste collectors, with low-income waste collectors handling the bulk of recycling without adequate protection or

institutional support.

The government's Plastic Waste Management Action Plan 2021–2030 sets bold targets: to achieve a 50% recycling rate by 2025, a 90% phase-out of single-use plastics by 2026, and a 30% reduction in total plastic waste by 2030. On the ground, the PLEASE project has brought innovation, deploying floating trash barriers in Dhaka's urban waterways that intercept up to 1,200 kg of plastic daily as a small but telling example of what targeted intervention can achieve in a country where the gap between policy ambition and infrastructure reality remains wide.

Bhutan



Bhutan, a landlocked Himalayan nation of approximately 790,000 people, faces a plastic waste challenge shaped by its near-total dependence on imports and a growing tourism sector that amplifies consumption during peak seasons. According to the National Waste Inventory Survey 2019, Bhutan generates around 172 metric tonnes of solid waste daily, with plastics constituting 17% of the total, the second-largest waste category after organics. The country's limited local recycling infrastructure means the bulk of this waste inevitably ends up in landfills, while rivers carry plastic pollution downstream into the broader transboundary river systems of South Asia. The Royal Government has responded with

increasingly ambitious policy commitments. A nationwide ban on plastic bags, first introduced in 1999, was reinforced with stronger enforcement in 2019. The government's Zero Waste 2030 Goal seeks to reverse current trends by achieving an 80% recycling rate, flipping a situation where 80% of waste currently goes to landfill. The 13th Five-Year Plan (2024–2029) further embeds circular economy principles into national development priorities. Governance is managed through district administrations contracting private collectors, though the absence of national standards for recycled products and thin domestic recycling infrastructure remain the key barriers to progress.

Maldives



The Maldives, an archipelago of over 1,190 islands spread across 26 atolls, with a resident population of just 515,132 faces a plastic waste challenge of disproportionate intensity. In 2024, the country received over 2 million tourists, roughly four times its own population, placing enormous pressure on waste infrastructure across 190 inhabited islands. With imports accounting for 61% of GDP and virtually no domestic manufacturing, almost all consumer goods, and their plastic packaging, arrive from abroad. The result is an estimated 19,800 metric tonnes of plastic

waste generated annually, or approximately 37.9 kg per capita; much of which risks leaking into the surrounding Indian Ocean and threatening the coral reef ecosystems on which both tourism and fisheries depend.

The Maldivian government has responded with a significant policy shift. The National Waste and Resource Management Policy and Strategy 2024, combined with a new Waste Management Act, aims to transition the country from a linear model of disposal toward a circular economy.

Nepal



Nepal, a landlocked Himalayan nation of approximately 29 million people, faces a plastic waste crisis concentrated acutely in the Kathmandu Valley, which alone generates around 1,200 metric tonnes of solid waste daily - Plastics constitute 12%. Over 60% of solid waste in the Valley is dumped on roadsides or riverbanks, with nearly 25% reaching open waters. A 2015 study found approximately 70,000 plastic fragments travelling through Kathmandu's such as the Bagmati, Rapti and other major rivers daily, eventually feeding into transboundary systems that drain into the Bay of Bengal. Kathmandu's sole landfill at Sisdoile is filled well beyond capacity, reflecting a systemic failure

of waste segregation at the household, commercial, and industrial levels.

Nepal's policy response centres on the Solid Waste Management National Policy 2022, which institutionalises the 3R approach, Reduce, Reuse, Recycle, as the guiding framework for national action. This is complemented by the National Environment Policy 2019 and National Climate Change Policy 2019, both of which support a transition to a circular economy. On the ground, the PLEASE project has enabled breakthrough infrastructure, through recycling facilities and infrastructure development to suit Nepal's landlocked geography and import-dependent economy.

Pakistan



Pakistan, the world's fifth most populous nation with over 240 million people, generates approximately 3 million tonnes of plastic waste annually, around 13 kg per person per year and expected to grow by 15% annually. Yet the systems to manage this waste are severely underdeveloped: only 26% of plastic waste is collected, and a mere 4% is recycled. The remainder pollutes urban streets, agricultural land, and waterways, with the Indus River acting as a major conduit carrying plastic into the Arabian Sea. Rapid urbanisation and a fragmented, under-resourced waste management

infrastructure make Pakistan one of the region's most urgent cases for intervention.

In response, Pakistan has developed a layered policy framework. The National Hazardous Waste Management Policy 2022 aligns domestic practice with the Basel Convention, while the National Plastic Action Partnership (NPAP) developed in collaboration with the World Economic Forum's Global Plastic Action Partnership, sets out a roadmap to reduce mismanaged plastic waste by 75% by 2040 and create 300,000 new jobs, with a focus on women and marginalised communities.

Sri Lanka



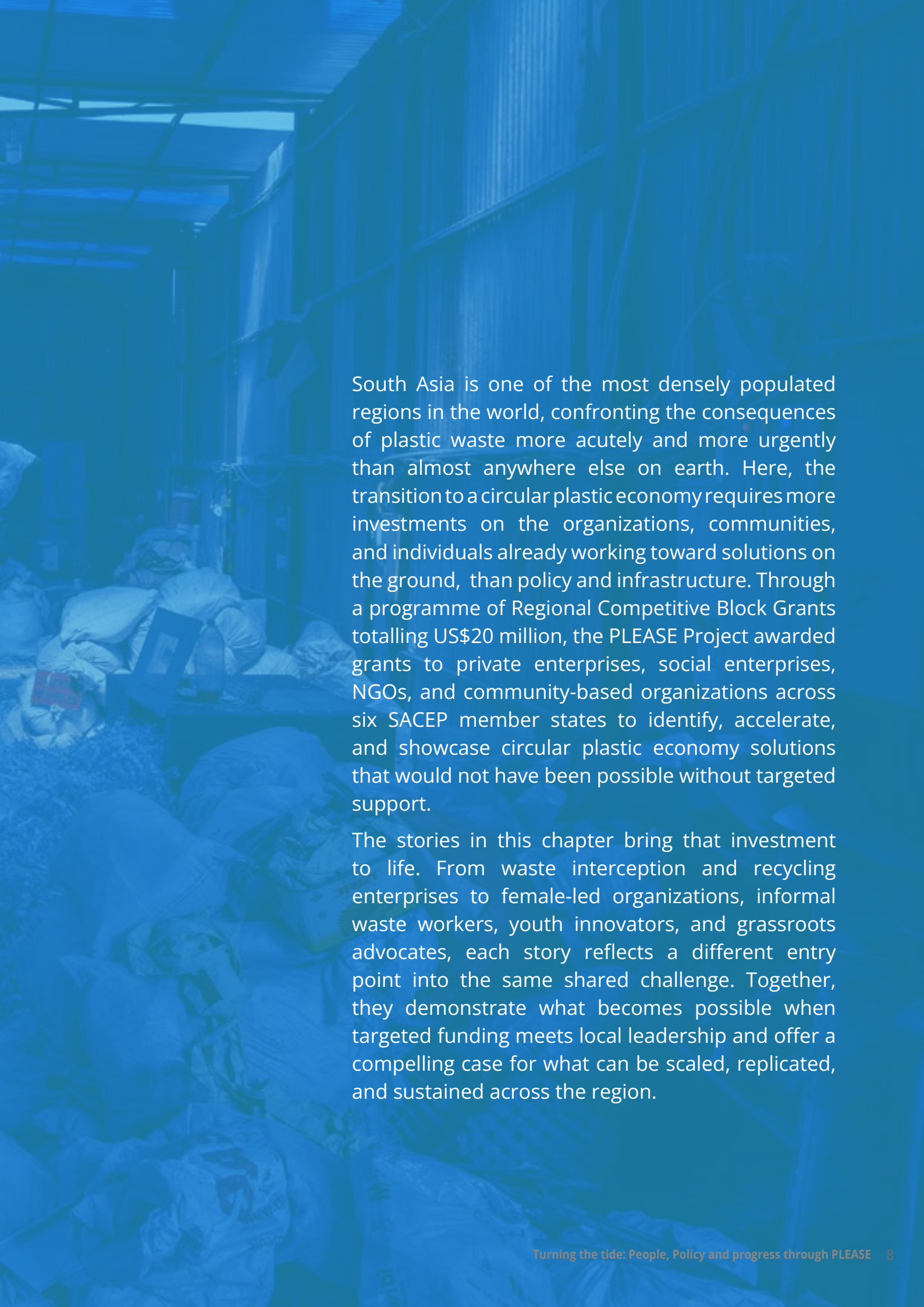
Sri Lanka, an island nation with a 1,620 km coastline and approximately half its population living in coastal areas, faces a plastic waste crisis with direct consequences for its marine ecosystems, biodiversity, and tourism-dependent economy. The country generates approximately 938 metric tonnes of plastic waste daily, yet only 300 MT/day is collected and a mere 38 MT/day is mechanically recycled. The remaining uncollected waste, estimated at 638 metric tonnes daily, is highly susceptible to environmental leakage, with around 8.45 MT/day discharged directly into water bodies, amounting to over 3,000 metric tonnes entering Sri Lanka's waterways and coastal waters each year. This

places Sri Lanka among the most significant contributors to marine plastic pollution globally.

The Government of Sri Lanka's National Action Plan on Plastic Waste Management (2021–2030) provides the central policy response, targeting improved waste segregation, increased post-consumer plastic recovery, and a transition to circular economy practices. A cornerstone of the plan is the adoption of Extended Producer Responsibility (EPR), placing lifecycle accountability on producers. Community-level measures include strengthening Material Recovery Facilities, engaging women-led organisations, and supporting informal waste collectors to create value-added recycling pathways.

Beyond the Grant: Real Stories, Real Impact from PLEASE





South Asia is one of the most densely populated regions in the world, confronting the consequences of plastic waste more acutely and more urgently than almost anywhere else on earth. Here, the transition to a circular plastic economy requires more investments on the organizations, communities, and individuals already working toward solutions on the ground, than policy and infrastructure. Through a programme of Regional Competitive Block Grants totalling US\$20 million, the PLEASE Project awarded grants to private enterprises, social enterprises, NGOs, and community-based organizations across six SACEP member states to identify, accelerate, and showcase circular plastic economy solutions that would not have been possible without targeted support.

The stories in this chapter bring that investment to life. From waste interception and recycling enterprises to female-led organizations, informal waste workers, youth innovators, and grassroots advocates, each story reflects a different entry point into the same shared challenge. Together, they demonstrate what becomes possible when targeted funding meets local leadership and offer a compelling case for what can be scaled, replicated, and sustained across the region.

	Innovator	Country	Type of organization	Locality
1	Bangladesh Rural Advancement Committee (BRAC)	Bangladesh	Private Sector	Cox's Bazaar
2	Bangladesh Petrochemical Company Limited (BPCL)	Bangladesh	Private Sector	Cox's Bazaar
3	RedOrange Communications	Bangladesh	Private Sector	Kallyanour, Ramchandrapur Khal, Mohammadia Housing Road
4	Arannayk Foundation	Bangladesh	NGO	Sundarbans
5	Institute of Marine Sciences, University of Chittagong	Bangladesh	Academia	Chittagong
6	Bhutan Ecological Society (BES)	Bhutan	NGO	Wangchu river
7	Greener Way	Bhutan	Private Sector	Thimphu
8	Green Road	Bhutan	Private Sector	
9	Eco Waste Solutions	Bhutan	Private Sector	Wangdue Phodrang
10	Clean Bhutan	Bhutan	NGO	Thimphu
11	Small Island Geographic Society	Maldives	NGO	Male`
12	Maldives Authentic Crafts Co-operative Society	Maldives	NGO	Male
13	Clean Maldives	Maldives	NGO	Clean Maldives
14	Community Empowerment Linkage	Maldives	NGO	
15	BioComp	Nepal	Private Sector	Lalitpur
16	Creasion	Nepal	NGO	Kathmandu, Chitwan
17	Doko Recyclers	Nepal	Private Sector	Bhaktapur
18	Centre for Integrated Urban Development	Nepal	NGO	Kirtipur
19	Department of Applied Sciences and Chemical Engineering, Tribhuvan University	Nepal	Academia	Kirtipur
20	Altas Pakistan	Pakistan	Private Sector	Hyderabad
21	ISP Environmental Solutions	Pakistan	Private Sector	Lahore
22	Davaam Life	Pakistan	Private Sector	Karachi
23	Otium Consultants	Pakistan	Private Sector	Lahore
24	Negombo Recycling Club	Sri Lanka	Private Sector	Island-wide
25	Island Climate Initiative	Sri Lanka	Private Sector	Island-wide
26	Chakra Suthra	Sri Lanka	Private Sector	Western province
27	INSEE ecocycle	Sri Lanka	Private Sector	North western province
28	Save a life	Sri Lanka	NGO	Northern province

A close-up photograph of a person wearing a blue respirator mask with a circular filter and a head-mounted device with a white strap. The person is looking down at a large white container, possibly a piece of equipment or a large bottle. The background is blurred, showing some greenery and a building.

Roots of Change: Youth engagement and grassroots action

South Asian lives are interwoven across a remarkably diverse ecosystem, where landscapes, cultures, and communities shape how environmental challenges unfold. Plastic pollution, therefore, is not a single story across the region; it manifests differently in each river basin, coastline, and city. Amid these varied contexts, young people are emerging as powerful changemakers. In schools, neighbourhoods, and cities, students, parents, and teachers are challenging everyday habits and inspiring their communities to rethink how plastic waste is produced, used, and managed.

Recognizing that lasting solutions must be rooted in the energy, creativity, and lived experience of those most affected, the PLEASE project places youth and local communities at the centre of its approach. When young people advocate within their own neighbourhoods, schools, and coastal villages, and when communities take ownership of the solutions that shape their environments, the results are deeper and more sustainable than any top-down intervention. Through grants, capacity building, and grassroots mobilization across SACEP's member states, PLEASE equips communities with the tools, platforms, and confidence to drive change from the ground up.



Shamim Akter working with local communities to keep waterways clear of plastic

Holding the line between Plastic and the Sea

BRAC | Towards a comprehensive and human-centred plastic waste management approach in the Cox's Bazar and Affected Regions by Myanmar Refugee Influx

[Cox's Bazar](#)

In Cox's Bazar, life is shaped by water. Rivers, drains and the sea weave through daily routines, carrying livelihoods, memories, and increasingly plastic. Here, plastic pollution is a severe problem driven by waste management challenges from rapid urban growth, tourism, and humanitarian crises. An estimated 124 tons of waste are generated each day, around 10% of which is plastic. Much of this waste pollutes the coast, enters the Bay of Bengal, and creates microplastic hazards, affecting marine life, tourism and human health from diseases such as dengue fever.

With the support of the PLEASE Project, BRAC is working with the local government and the community to rethink how plastic waste is handled at community level and

ease the burden on Cox's Bazar Municipality to keep waterways clear of plastic. Shamim Akter, Cox's Bazar's Social Development Officer, leads BRAC's on-the-ground efforts, coordinating closely with residents to find creative solutions and to turn shared responsibility into practical action.

Shamim and her committee installed brightly colored communal bins shaped like plastic bottles in the neighborhood most affected by flooding and waste leakage. The prominent bins help raise the community's

awareness about what they can do to prevent plastic entering their waterways. When she is on the streets and addressing community meetings, Shamim urges people to use the

"People think once the plastic waste leaves their houses, it's gone." Shamim says. "But waste management is not just a service - it is a shared responsibility." Shamim says.



Cox's Bazar's Ziaur Rahman took action to preserve the source of his livelihood

bins and has inspired communities to join clean-up drives in their areas.

This model of collaborative governance, where local officials take ownership of interventions for change, is ensuring that efforts to reduce plastic pollution become part of the city's long-term sustainability efforts.

Fishermen in Cox's Bazar join the fight against plastic pollution

For 37-year-old fisherman Ziaur Rahman, the impact of plastic pollution is deeply personal. Like many in his community in Cox's Bazar, his life is bound to the sea, where generations before him have relied on the sea as the source of their family's livelihood. In recent years, however, Ziaur notices the waters around Cox's Bazar changing. His fishing nets increasingly come up tangled with plastic, and the fish he depends on have begun to disappear.

Grappled with these challenges, Ziaur joined a BRAC-led training programme under the PLEASE project focused on recovering the hard-to-recycle plastics.

"We knew the plastic made our work harder, but we did not realise it was killing the sea itself. It's driving the fish away, forcing us

further out into the ocean," Ziaur said.

During the training, Ziaur learned how to manage plastic waste while fishing for days at sea, protect his health and hygiene during long fishing trips, and most importantly, how to handle single-use plastic.

Now, Ziaur and his team no longer toss plastic overboard. Instead, they bring it back to shore for proper and responsible disposal. Beyond changing his own practices, Ziaur has taken the role of becoming a community advocate - sharing his knowledge with fellow fishermen and encouraging them to protect the source of their livelihood.

Standing on the shoreline, Ziaur imagines a different future: One where cleaner waters, healthier fish stocks, and a community is able to thrive without plastic waste threatening its survival.

"We knew the plastic made our work harder, but we did not realise it was killing the sea itself. It's driving the fish away, forcing us further out into the ocean,"
Ziaur Rahman



Students learning about their role in keeping the environment clean

Mobilizing young people for lasting change

RedOrange Communications | Improved Flood Mitigation and Plastic Waste Management in the Kallyanpur Area

[Kallyanpur](#)

For students at Nabadiganta Adarsha High School, in Dhaka, plastic pollution is no longer an abstract environmental issue but something they can see, question and act on.

Through the 'Save Canals, Save City' school campaign led by PLEASE Innovation Grantee Red Orange Communications, 70 students, 15 teachers, and parents engaged in activities that revealed how everyday plastic disposal ends up clogging canals and threatening urban life. Together they traced the causes of canal pollution, from littering, industrial waste, to poor waste management and discussed how small actions at

household and community level could make a difference.

"We are polluting the canal with these plastic materials." Jannat Akhter Tuli, a student shared "We need to be more conscious to keep the canal clean",".

Students translated their learning into illustrations and visual stories, showing how pollution harms people and ecosystems, and what a cleaner future could look like. The process encouraged them to rethink their own waste disposal habits and evaluate what they could do better through.

Head teacher Md. Enamul Hoque committed to installing a plastic bottle disposal facility at the school, ensuring that lessons would lead to lasting change. "Let's make sure that this learning goes beyond the classroom and inspires real change in the Community."



Students participating in the 'SAY NO TO PLASTIC' campaign

From classrooms to city-wide action

Institute of Marine Sciences (IMS), University of Chittagong (CU) | Community-based Reduction of Plastic Pollution: Case of Circular Economy and Biodegradable Products in Bangladesh



Chattogram City located on the banks of the Karnaphuli River, generates around 2.6 tonnes of plastic waste annually. Nearly 27% of it remains unmanaged, posing severe threats to the environment, marine biodiversity and public health, according to a study published by the University of Chittagong.

Additionally, about 19,000 fishing boats and trawlers operating in Bangladesh's coastal and marine zones use around 40,110 tonnes of plastic-based fishing gear and other materials annually. Of this, nearly 2,740 tonnes are left or abandoned at sea, adding to the growing crisis.

Through a nine-day science competition launched by the Institute of Marine Sciences (IMS) at the University of Chittagong across nine schools in the Chattogram City Corporation (CCC) area, 1,784 secondary school students from grades six to ten became active participants spearheading the fight against plastic pollution in Chattogram,



During the nine-day science competition students engaged in interactive training sessions on plastic pollution's socio-environmental impacts, identified plastic types, explored sustainable alternatives, and created daily action plans to become responsible environmental citizens. Rather than learning about these challenges passively, students were encouraged to respond creatively and critically, empowering students to take meaningful action against one of the most pressing environmental challenges threatening their city and the country's vital coastal ecosystems.

Guided by the AIR framework (Avoid, Intercept, Redesign), an art competition challenged them to visualize creative solutions. A science-based model exhibition showcased student-designed prototypes tackling the plastic crisis, while poster presentations and campus-cleaning drives

directly connected classroom knowledge with tangible action.

During a clean-up drive, seventh-grader Nadim Ahmed said: "Cleaning our school premises felt like cleaning our entire city." This sense of civic pride had a tangible impact: within days, several neighborhood shops voluntarily reduced their use of polythene bags. Their actions served as powerful proof that when young people lead by example, the entire community takes notice.

"We saw firsthand how young people, when empowered with knowledge and opportunity, can become true champions of change. This model holds immense promise for replication across other schools and cities in Bangladesh," Project team leader Dr M Shahadat Hossain



Tshering Lhamo and the Gross International Nature initiative spend three years testing, redesigning and competing in start up challenges to develop Useful Recycled (UR) Bricks

 [Thimphu](#)

Young people build a green construction future

The Bhutan Ecological Society |
Reimagining Effective Partnerships for Tackling Plastic Waste and River Pollution

When Tshering Lhamo was a college student, she and a group of friends did what many young people across South Asia do: they looked at the world around them and decided they could not simply look away. Together, they founded Gross International Nature (GIN), a student-led transboundary initiative bringing together young researchers from Bhutan, Bangladesh, and Nepal to study the

growing crisis of plastic waste. But the deeper they looked, the more certain they became of one thing: research alone was not enough.

“Research was not enough for us. We somehow felt like making a real change on the ground. That’s when we decided to act. To do something, even small, that can make a change,” says Tshering.

In Bhutan, the gaps were stark. Data on plastic waste was scarce, and recycling capacity was critically limited leaving plastic to accumulate in landfills and waterways in a country renowned for its commitment to environmental conservation. GIN set out to



GIN partnered with the Bhutan Ecological Society to reach Bhutanese households directly.

close those gaps, not with another report, but with a product. Partnering with a Dutch recycling company, the team channelled three years of testing, redesigning, and competing in start-up challenges into the development of Useful Recycled (UR) Bricks - interlocking construction bricks made

entirely from recycled plastic, designed to be easily assembled, dismantled, and reused for temporary and small-scale structures.

"I don't want waste to be just waste," Tshering says. "I want to make it into something useful."

GIN partnered with the Bhutan Ecological Society, a PLEASE project Regional Block Grantee to bring this vision to scale. Together, they are now reaching Bhutanese households directly, educating families on how to identify and segregate plastic waste at source. GIN buys this segregated waste from households, feeds it into their recycling hub at Bjemina Industrial Estate, established with PLEASE support, and transforms it into UR Bricks and PET pellets, closing the loop between community action and green construction in a way that has never been done before in Bhutan.

The impact is already visible on the ground. GIN is now working with partners including the Bhutan Toilet Organization to construct temporary toilets for public events using UR Bricks, with architects and engineers collaborating alongside the young innovators to ensure every structure meets Bhutan's green construction guidelines. What began as a student research project has become a functioning circular economy model: one that is creating livelihoods, reducing plastic pollution, and quietly rewriting what is possible in Bhutan's construction sector.

For Tshering and her team, the significance of what they have built goes beyond bricks and pellets. "This is the first time Bhutan has ever produced UR Bricks and PET Pellets," she reflects. "For us, this is more than innovation. It is about creating a new culture around waste. Waste should not just pile up in the landfill. It should help build our future."

In a country where young people are increasingly stepping up as environmental leaders, Tshering and GIN are proving that the most powerful solutions are often the ones that begin with a simple but radical idea: nothing, and no one, should be wasted.



In the Maldives, the ocean is becoming a dumping ground.

Island by Island: How Two Maldivian Communities Are Reclaiming Their Shores

Maldives Authentic Crafts Cooperative Society (MACCS) | Improving the wellbeing of H. Dh. Kulhudhuffushi people and ocean through plastic pollution prevention

Beneath the Maldives' reputation as a paradise lies a growing environmental reality that its islanders know well. Plastic bottles line the beaches. Waste sites are overflowing. And on islands where 80 per cent of households depend on fishing, the ocean is becoming a dumping ground. But across the archipelago, communities are not waiting for national solutions. They are building their own.

On M. Mulah Island, a business and residential hub in the central atoll, plastic pollution had reached a tipping point. Drinking water arrives on Maldivian islands almost exclusively in plastic bottles with a single restaurant on Mulah consuming approximately 400 cases every month. For fishing crews, the numbers are even starker:

each vessel uses 20 to 30 cases of plastic water bottles on a single trip, with much of that waste ending up in the ocean.

"One of the major problems we've been experiencing is the amount of plastic waste being washed up onto our beaches," said Ahmed Shameem, a local businessman who has run a café and guesthouse on the island for 16 years.

The health stakes were also becoming clear. "Chemicals may leach into the water when these plastic bottles sit in the sun for hours," warned school teacher Mariyam Shifana with a concern felt especially sharply in a community where children and young people spend much of their lives outdoors.

On Kulhudhuffushi Island to the north, residents had long tried to do the right thing by separating plastic from household waste at home. But their efforts went nowhere. Without proper infrastructure, separated waste ended up in the same overflowing dump as everything else.

"Everyone knows that after separating waste at home, it would go into the same big



Small island communities, when equipped with the right tools and infrastructure, are entirely capable of leading environmental transformation

trash dump,” said Maldives Authentic Crafts Cooperative Society (MACCS) Chairperson Aminath Abdulla.

With this background, MACCS identified the missing link and built it. A new Material Recovery Facility (MRF) gave residents’ a place where separated waste was actually processed and prepared for export and recycling. “The MRF is the foundation of all we do. If you want people to change their behaviours at home, you need to show them that the waste they separate goes

somewhere properly,” said MACCS Team Leader Hudha Ahmed. MACCS also worked with the City Council to develop new local waste by-laws and secured agreements with the national Waste Management Corporation (WAMCO) to ensure the facility would remain operational long after the project ended, embedding community infrastructure into formal governance.

On M. Mulah, the response to the plastic bottle crisis came through a technology-driven community solution: water purification systems installed on fishing vessels. The impact rippled quickly through the fishing community and with it, a shift in mindset, particularly among younger fishers who saw a direct connection between what they discarded and what washed back onto their shores.

The vision articulated by community leaders is one being carried forward by the next generation. “Eventually, all of the fishing boats coming out of M. Mulah will no longer dispose of plastic water bottles in the ocean,” said CEL Vice-Chairperson Ali Ahmed Manik. “We want Mulah to be free of plastic for good.”

In mosques, the change was equally visible. After water purification systems were introduced, plastic bottle waste dropped dramatically, most notably during Ramadan, when community gathering is at its peak. “There is a large decrease,” confirmed Mosque Imam Abdul Sattar Mohamed. “This change was significantly seen during Ramadan.”

What M. Mulah and Kulhudhuffushi have demonstrated is that small island communities, when equipped with the right tools and infrastructure, are entirely capable of leading environmental transformation. The interventions began modestly with a water filter, a sorting bag, and a recycling facility. But their effects are accumulating into something larger: a shift in culture, in expectation, and in what communities believe is possible.

For a nation defined by the ocean, that shift may be the most important catch of all.



SIGS consulted young people to actively develop solutions that change public behaviour

Lights, Camera, Action Against Plastic

Small Island Geographic Society (SIGS)

| Remove PLASTics from our Coastal Environment (REPLACE)

SIGS's production of *Aa Ehcheh: Challenging Plastics* was to raise awareness on single-use plastics (SUPs) and encourage young people to actively develop solutions that change public behaviour. The TV show followed four teams of three children, two all-girl and two all-boy teams, through the full innovation cycle, from ideating solutions to building and presenting prototypes to a panel of judges.

Vaana, the all-girl winning team and Top Innovator award recipients, developed and tested a working prototype addressing a real SUP problem. "This opportunity empowered

us to take meaningful action," the team shared, adding that the experience sharpened their critical thinking and problem-solving skills. Their win earned them a stage at Universiti Malaya, where they presented their innovation to university students.

Public response was overwhelmingly positive. Parents wrote in sharing how their daughters felt inspired seeing girls leading and winning in an innovation context, a visibility gap rarely addressed through conventional STEM programming.

Government officials and STEM education leaders at the premiere noted the show produced stronger youth engagement than traditional lessons or workshops, and expressed formal interest in replicating the approach.

A man with a beard and glasses, wearing a white hard hat and a high-visibility yellow safety vest over a white shirt, is focused on working on a small, dark, rectangular mechanical component. He is holding it with both hands. In the background, there are various tools and equipment on a workbench, including a yellow and black power drill and some metal rods. The entire image has a blue tint.

Digital Innovation and Infrastructure Development

Across South Asia, change is happening at remarkable speed. From Dhaka to Khulhuffushi, economies are expanding with growing population and new technologies and infrastructure, reshaping everyday life. Yet alongside this growth comes the complex challenge of managing the increasing volume of plastic waste generated by rapidly modernizing societies.

Through the PLEASE Project, grantees and member states are testing practical solutions that combine innovation with on-the-ground infrastructure. These range from digital tools that improve waste tracking and data systems to locally developed solutions such as refill stations and plastic-infused construction bricks in Pakistan, plastic waste used in road construction in Bhutan, and water filtration systems in the Maldives that reduce reliance on single-use plastics. Together, these initiatives show how locally driven innovation can strengthen waste management systems across the region.



Davaam Life's smart refill vending machines allow consumers to refill product without a single piece of new plastic

 [Karachi](#)

Filling the Gap for a Plastic-Free Movement

Davaam Life | Refill stations for Consumer Products to Inculcate Consumer Behavior Change Towards Reuse in Karachi

Karachi is one of the most populous cities on earth; a megacity of over 20 million people whose daily consumption generates a staggering volume of plastic waste. Like much of South Asia, the city has long been caught in the cycle, where products sold in single-use

packaging are discarded into a waste system that cannot keep up. For Salman Tariq, the co-founder of Davaam Life, the answer to control the cycle was not to manage the consumption or the waste, but to stop creating the waste in the first place.

"To solve the plastic problem, we shouldn't just focus on post-consumption waste management. We need to start where it all begins, and that's at the point of retail," says Tariq. "We need to instill consumer behavior change, and to provide consumers with



workers are now able to refill approximately three litres of cooking oil each month, avoiding 200kgs of plastic waste every year

an alternative to the single-use packaging available in supermarkets".

Davaam Life installs smart refill vending machines in shops, businesses, and community spaces, dispensing everyday household essentials including cooking oil, surface cleaner, dishwashing liquid, laundry detergent, and shampoo. Consumers bring their own bottles to refill with product, and leave without a single piece of new plastic. The technology is accessible, affordable and designed specifically for the realities of urban life in Pakistan, where many families buy in small quantities because bulk purchasing is simply not an option.

Davaam's mechanism is a practical, replicable model that meets people where they are; in their neighborhoods, workplaces and

daily routines, offering them a better choice. Through a franchising model, partnering with local entrepreneurs and business, Davaam Life is rolling out refill stations across new communities and cities.

At Mianoor Techtile Factory in Karachi, Team Lead Umair had for years distributed cooking oil to his 200 workers each month: a meaningful gesture to help employees manage rising living costs, but one that came with the unintended consequence of having hundreds of single-use plastic bottles getting discarded every month. Since Davaam's refill machine was installed at the factory, workers are now able to refill approximately three litres of cooking oil each month without a disposable bottle in sight, avoiding 200kgs of plastic waste every year. Beyond just an environmental impact, the refill model helps Mianoor save Rs. 33,000 every month.

In Rawalpindi, Davaam Life partnered with a local entrepreneur, Kamil, to open a refill shop equipped with Davaam's refill machines. The shop, named Davaam-e-Aam, which means sustainability for the common people, offers essential household products like cooking oil, detergent, and shampoo in small, refillable quantities.

"The key advantage of Davaam's technology is that it caters to people's purchasing power, offering small quantities that spark curiosity and attention," Kamil said.

In just a month, Davaam-e-Aam sold 110 litres of product, with each refill helping to eliminate one plastic bottle. The shop is now serving as both a micro-business and a community hub, normalizing reuse and enabling residents to participate in reducing waste at the household level.

Tariq says Davaam Life is preventing the leakage of approximately 22,000 metric tons of plastic to Pakistan's waterbodies. "The project has sparked a powerful movement bringing together individuals, communities, civil society organizations, companies, and the government, all united in building a cleaner Pakistan through effective plastic waste management" Tariq said.



In the informal settlements along Kharak Nala near Multan Road in Lahore, more than 250 households survive entirely on door-to-door plastic collection

 [Lahore](#)

From the Margins to the Marketplace: Transforming the Lives of Informal Waste Workers in Lahore

OTIUM Consultancy Services | PlasteTech-PK: Revolutionising Plastic Waste Management

Pakistan's plastic waste crisis is not simply an environmental challenge but a deeply human one. In the informal settlements along Kharak Nala near Multan Road in Lahore, more than 250 households survive entirely on door-to-door plastic collection, living in fragile shelters without access to basic services, secure land rights, healthcare, or education. For generations, families here have remained trapped in cycles of poverty and exploitation, selling their hard-collected plastic to middlemen who dictated prices

and left workers with little choice and even less power. Without transparent pricing, direct market access, or any form of digital inclusion, the people doing the hardest work in Pakistan's plastic value chain were also the ones benefitting the least from it.

That is the motivation behind the PLASTECH App, developed by OTIUM Consultancy Services. With the support of the PLEASE project, OTIUM developed Pakistan's first digital marketplace for plastic waste trade, connecting waste workers directly with buyers, bypassing exploitative intermediaries and bringing transparency and traceability to transactions that had long been invisible.

For Mehwish, the PLASTECH app was not a minor adjustment. It was a shift in power. At 25, she was already her household's sole breadwinner. Each day she collected plastic from homes across her settlement,



OTIUM developed Pakistan's first digital marketplace for plastic waste trade, connecting waste workers directly with buyers

segregated it by type, and sold it to a single scrap dealer who set the price and left no room for negotiation. In December 2024, she was among 25 women from her community trained on the PLASTECH App with the help of a local schoolteacher. Within weeks, her monthly income rose 30%, from PKR 15,000 (USD 53) to over PKR 19,500 (USD 69), simply by gaining access to fairer, more competitive markets. *"If we are given skills, education, and opportunities like this app, we can change our lives,"* says Mehwish speaking not just for herself, but for the entire community of women who, like her, had been kept on the margins not by lack of effort, but by lack of access.

That same lack of access had shaped Suhail's life too; A middle-aged father supporting an extended family through plastic collection. Suhail knew the weight of the system intimately, the long distances travelled to reach scrap dealers, the debt cycles, the

absence of any formal safety net. Yet when PLASTECH arrived, Suhail was among the first to embrace it, teaching himself to use an Android phone and adopting the platform immediately. Within one month, his income grew by PKR 3,000, and the physical burden of his daily work eased considerably. *"This app gives us convenience, better rates, and dignity,"* he says. *"It connects us to a system that feels fair."* So moved by the difference it made, Suhail now volunteers to spread awareness about PLASTECH across his settlement, driven by a belief that digital inclusion can break the very cycles of bonded labour and exploitation that have defined life there for generations.

Shaxie, also trained through a PLASTECH session in December 2024, experienced the same shift. Her daily earnings rise from PKR 800 to PKR 1,000 for the same volume of waste collected without extra hours, only fairer access to the market. But Shazia's ambitions for the app stretch beyond her own household. She advocates passionately for women's digital inclusion, understanding that when women are equipped with tools and skills, the benefits ripple outward into education, health, and the wellbeing of the next generation. *"Women work just as much as men, but we also carry the burden of households and childcare. If women are trained and supported, this app can change our community."*

- "If we are given skills, education, and opportunities like this app, we can change our lives"

Together, the experiences of Mehwish, Suhail, and Shazia tell a story that goes beyond income gains or app downloads. By connecting waste workers directly to buyers through a transparent digital marketplace, PLASTECH eliminated the information asymmetry that had long kept informal collectors at the margins of the formal economy. Through this digital infrastructure, OTIUM is demonstrating that bringing traceability and real-time pricing to plastic waste trade can fundamentally reform how the sector operates, boosting incomes, reducing physical burdens, and creating a more efficient supply chain from collection to recycling.



Chakra Suthra installed ten Reverse Vending Machines across Sri Lanka, allowing consumers to easily dispose of their plastic and receive instant digital rewards

 [Colombo](#)

Closing the Loop: How Innovative Collection is Rescuing Sri Lankan Seas

Chakra Suthra | Use of Trash2Cash Smart Technologies to Change Consumer Behavior and Enhance the Collection of Recyclable Plastics

In Sri Lanka, out of its nearly 938 metric tons of daily generated plastic waste, only about 4 percent enters formal recycling systems, leaving much of the remainder in landfills, waterways, or the Indian Ocean. The urgency for change is palpable. But amidst this severe environmental crisis, emerged Chakra Suthra and its groundbreaking Trash2Cash project, offering a path towards a sustainable future.

At the heart of Chakra Suthra's vision is a fundamental question: What if recycling could be smart, easy, and rewarding? "When we analyze this flow of material, we realize that the collection from what consumers generate is the biggest stumbling block for the recycling to flow properly," says Himesh Fernando, founder and CEO of Chakra Suthra. This realization fueled the creation of a technology-based collection platform designed to incentivize consumers: "We give a proposition for the consumer – a cash value for their trash. Hence the word Trash2Cash for our project."

Chakra Suthra launched two digital innovations to address this challenge. The first is an 'Uber-style on-demand home pick-up system for recyclables' via a mobile App.



Once consumers deposit plastic bottles into the RVM, rewards are sent straight to their phones

This novel approach, a first for Sri Lanka, allows households to schedule collections of plastics and reusables right from their doorstep, transforming the previous chore of sorting and disposal, into a simple act of environmental stewardship.

Equally groundbreaking is a unique digital redemption platform that links waste to economic utility. Ten Trash2Cash Reverse Vending Machines (RVMs) have been strategically placed across Sri Lanka, allowing consumers to easily dispose of their plastic and receive instant digital rewards. These rewards, convertible to eZ cash credits, can be redeemed for mobile data or utility bill payments. This ingeniously links waste management with daily economic needs, driving a profound shift in mindset and behaviour change amongst communities.

The immediate impact has been resounding. In its initial eight weeks, the project collected over 1,848 kg of plastic waste, and more than 3,600 individuals actively engaged with the system, proving that convenience and reward can scale a circular economy.

The tangible benefits of this system resonate deeply within the communities they serve. Chandani Gunasekara, a cleaning service employee, shared the economic value this system unlocked for her: "I collect bottles and

put them in the RVM, and from those rewards I am able to buy groceries like tea, sugar, biscuits. I have gotten rewards equivalent to Rs. 1000/2000 per month from the RVM. The fact that I get to purchase goods from items that have been discarded is very valuable for me at a time like this."

Suranga Fernando, another cleaning service employee, echoed this sentiment. "The Trash2Cash machine can be used by disposing bottles into the machine and inputting our phone number. Then we get the rewards straight to our phones as a message. I input around 100 bottles daily, and it adds up to a lot for the month. And therefore, I can easily purchase the items I need at the end of the month."

Beyond the RVMs and the mobile app, Trash2Cash has expanded its collection infrastructure through a network of ten trained micro-entrepreneurs deployed across communities to run collection operations and engage households in the recycling system. This on-the-ground network acts as a critical last-mile layer, ensuring that the digital platform is supported by physical reach into neighbourhoods where door-to-door collection is most needed.

Together, the digital and physical components of Trash2Cash create a closed loop: the app and RVMs capture material from households and businesses, while the collection network drives uptake and ensures material flows efficiently through the system. Chakra Suthra plans to scale from 10 RVM units to 1,000 across Sri Lanka, building the infrastructure backbone for a national plastic collection system.

The project vividly showcases the circularity of its efforts. Himesh Fernando proudly notes that the collected plastic has a valuable afterlife: "They shred it, melt it down, and they convert it into a yarn, and the yarn gets spun into fabrics like t-shirts which will utilize about 15 PET plastic bottles." Tetra packs, too, are being converted into essential stationary items like books, file covers, and paper. "It's a very encouraging story for us, as well as the people who recycle, to see something really tangible come out of what they put into the Trash2Cash machine."



盈創回收
INCOM RECYCLE



29s

Your quantity of recycled UBCs achieved 4 .

With your support the quantity of recycled UBCs achieved **342692**. It has already saved:

- **51404** KG of oil
- **4798** trees
- **25017** KG CO2 emissions



Finish

INCOM
TOMRA

Trash2Cash
RVMs collected
over 1,848kg of
plastic waste
with more than
3,600 people
engaging with
the system

With ambitious plans to scale its RVM network from 10 units to 1,000 across Sri Lanka, Chakra Suthra's innovative approach, combining on-demand logistics, digital rewards, and real-life utility integration, is significantly driving plastic collection and transforming communities in Sri Lanka.

Trash2Cash demonstrates how combining digital incentive platforms with physical collection infrastructure can create a scalable, data-driven plastic recovery system — one that makes recycling convenient for consumers while generating the volumes needed to sustain commercial processing and manufacturing downstream.



Both the Bhutanese government and private sector are supporting local community projects that recycle plastic waste into roads, bricks, and polyester fibers.

Bhutan's Entrepreneurs Transform Plastic Waste into Infrastructure and Economic Opportunity

Green Roads | The Green Initiative to Reduce Plastic Pollution

In Bhutan, community initiatives to build roads, bricks and manufacture polyester fibres from recycled plastic waste are being embraced by government departments and the private sector, boosting Bhutan's local capacity to reduce plastic pollution.

"I was determined to bring this technology to Bhutan, a vision I held since my college days," says Rikesh Gurung, founder of The Green Road. Gurung's vision came to life in 2014,

becoming Bhutan's first company to use plastic waste in road construction. Gurung started with segregating waste plastic at the source, extracting plastic waste from landfills and using it to blacktop roads. "We built the company and factory with our own hands, saving significant costs and demonstrating our commitment."

In 2015, Green Road collaborated with the Bhutanese Department of Roads to construct the country's first trial plastic road; a 150m long, 8m wide stretch of road at Olarongchu, Thimphu. The constructed road is still intact today and only needed minor repairs in 2023, 8 years after construction.

His efforts proved the concept was environmentally friendly, economically viable, socially responsible and technically feasible in



Bhutan's first experimental plastic-blend road, built in Thimphu in 2015 by Green Road, proved highly durable, remaining intact for eight years before requiring only minor repairs.

Bhutan, and Green Road began participating in government and construction tenders. "Plastic roads are now mandatory in Bhutan, a testament to the mainstream acceptance and impact of our work," Gurung said. "By extracting 190 tons of plastic from landfills, we created 7 cubic meters of space per ton, significantly extending the landfill's life and showcasing environmental achievement." Since inception, the company has used around 850 tonnes of plastic waste to blacktop 159km of roads in western Bhutan.

Gurung continued to innovate and in 2023 Green Road launched a groundbreaking initiative called Ecobricks - plastic bottles filled with compounded soft plastics - which once shredded are used in road construction. He involved students in the initiative through a collaboration with the Ministry of Education and Skills Development. Then, in 2024, with the support of the PLEASE Project, Gurung

began a community-wide advocacy campaign educating people about waste management and involving community members in the collection of plastic for use in Ecobricks. "I'm passionate about engaging with the younger generation, visiting schools to educate them on waste management and inspire them to be future change-makers."

Since 2024, as a result of Green Road's initiatives, the use of shredded plastic in blacktopping roads is mandatory for 8% of road construction in Bhutan.

"By extracting 190 tons of plastic from landfills, we created 7 cubic meters of space per ton, significantly extending the landfill's life and showcasing environmental achievement."



CEL installed household water purification systems in homes, businesses, and mosques to reduce plastic waste

 [Maldives](#)

The Tide of Change: How Maldivian Communities Are Rewriting the Story of Plastics

Community Empowerment Linkages (CEL)
| No Plastic Island 'Heavenly Mulah

The Maldives, an island nation known globally for its crystal-clear blue waters, is struggling with a growing, yet less visible problem in its ocean views: plastic pollution. Plastic bottles wash on the island's shores daily and waste disposal sites are overflowing. A significant cause of the plastic pollution are single-use plastic bottles that are the primary method for obtaining drinking water in Maldives. Environmental threats that seemed remote are now being experienced by islanders from coast to coast.

Two islands are taking action and developing local solutions to the environmental crisis - Kuhudhuffushi in northern Maldives and M. Mulah in the central atoll.

M.Mulah Island is both a business hub and a place where residents' daily life centers around the beach and ocean. Plastic pollution has grown to a point that islanders cannot ignore it. Ahmed Shameem, a businessman with a 16-year history of operating a cafe and guesthouse in Mulah said: "One of the major problems we've been experiencing is the amount of plastic waste being washed up onto our beaches."

Drinking water is primarily brought to the Maldives' islands via plastic bottles. "One restaurant alone goes through approximately

400 cases of water bottles each month," Ahmed said.

Around 80 per cent of households in the islands are fishermen, who rely heavily on plastic water bottles, using 20–30 cases on a single fishing trip. Managing waste on board the boats is difficult and many of the plastic bottles end up as litter in the marine environment.

Community Empowerment Linkages (CEL) introduced sustainable and innovative methods to replace the use of bottled water on M.Mulah Island by introducing a new method of purifying water directly in households. Through the installation of water purification systems in islanders' homes, mosques, and businesses, CEL's efforts greatly reduced the island's dependency on bottled water in just months.

"We now have a guaranteed supply of clean and safe water that avoids plastic waste. And that gives us joy," school teacher Mariyama Shifana said.

The introduction of water purification also delivered a positive economic impact for businesses. Restaurants that previously spent \$600 or more on bottled water each month now paid \$130 in monthly water bills.

"Equally important is access to water. When the shops are closed, we used to worry about running out of drinking water. But now we do not have to worry," Shifana said.



The Maldives, an island nation known globally for its crystal-clear blue waters, is struggling with a growing, yet less visible problem in its ocean views: plastic pollution.

 [Maldives](#)

Crossroads of Paradise: Is a Circular Economy Possible in the Maldives?

Clean Maldives | Plastic Innovation Challenge for Hospitality and Food service Sector in Maldives

The Maldives, renowned for its beautiful, pristine white-sand beaches across islands, is struggling to maintain a fragile balance between its environment and the impacts of increased tourism. The number of tourists visiting Maldives each year is four times the number of the country's citizens.

Maldives' tourism boom is the country's economic lifeblood.

However, the influx of visitors leaves the country overwhelmed with the constant flow of plastic waste generated by tourists' consumption. Much of the waste includes non-biodegradable plastic packaging generated from goods imported to service the rapidly expanding food and beverage, accommodation and hospitality sectors. In the past, much of this plastic waste was either incinerated or dumped in Thilafushi, the garbage island, methods that are both unsustainable and unacceptable for a low-lying nation vulnerable to the impacts of global warming.

CLEAN Maldives President Hafsath Aleem decided to act after realizing that her home country was in a state of crisis caused by the



Clean Maldives, in partnership with Siam World Resort, recycles about half of its daily plastic waste (around 100kg), repurposing HDP and LDPE plastics into functional items like benches, furniture, and flower pots.

enormous amount of plastic waste generated by the tourism industry. In 2024, CLEAN Maldives launched the Plastic Innovation Challenge with a hands-on upcycling center.

The initiative's beginning was tough with challenges such as long processes for environmental and tourism approvals, shipment delays, and hesitation from hotel partners to collaborate on a new idea. But, Clean Maldives successfully developed a viable solution to address the hard plastic problem through a new, localized supply chain that utilizes a unique recycling machine that produces a durable lumber product from hard plastic waste. Sana Musthafa, the lead technical consultant, said: "The machine is 100 percent carbon emission free, and it does not produce any by-products." The innovation eliminates the necessity of purchasing imported materials while also removing plastic waste from the environment.

The long-term viability of the project depends on local acceptance and involvement, especially within the tourism sector. In partnership with Clean Maldives, the Siyam World Resort, one of the biggest resorts in

the Maldives, has converted its plastic waste into an opportunity for the community by developing its own recycling center on site. So far, the resort recycles approximately 50% of its plastic waste daily - around 100kg - processing high-density and low-density polyethylene (HDP and LDPE) plastic into functional items such as benches, furniture, and flower pots. This results in significantly less waste being transported to Thilafushi Island.

Additionally, tangible outcomes of the project contributed to changing the community's mindset. The resort's Group Sustainability Manager Chaminda Upul said the facility was unable to recycle single-use plastics and this limitation in the facility was being used as an opportunity to promote behavior changes in the community. "We are encouraging the community not to use single-use plastics."

This approach is being replicated throughout the tourism industry. Ahmed Siyam, an entrepreneur with multiple restaurants and guest houses, is collaborating with Clean Maldives to provide the solution on an industry-wide scale. He is a proponent of the transition and plans to utilize the recycled material in his own ambitious project: "We were planning to build one of the first completely plastic-free guest houses in the Maldives", he said. For him, the machinery is a working model of how to solve the large amounts of waste generated by his business ventures, which he refers to as "a larger beginning" for the industry.

While the initiative's scope extends beyond the positive impacts on the environment and the business sector, it is ultimately designed to create a true circular economy with a tangible social impact.

The upcycling centers, such as the ones developed in association with Siyam World and the inhabited island of N.Kudafari, are no longer privately owned. They are instead functioning as shared resources. Approximately 40% of the durable furniture manufactured at the center - including benches, chairs, and planters - is donated to public areas, including parks and beaches. The durable furniture and lumbers produced from the waste are donated to the local



The durable furniture and lumbers produced from the waste are donated to the local communities for use in creating parks and other recreational areas

communities for use in creating parks and other recreational areas. In doing so, the initiative converts pollution into a public good and builds community buy-in for the initiative.

The facility has also generated new job opportunities for the people of the islands. At least one machine used in the process (the main upcycling center) recycles about 800 kg of plastic per month and has created more than 10 jobs. Siyam World resort has added two new machines as a result of the upcycling efforts.

Hafsath's vision for the recycling facility is quite clear: "I will make sure that we'll be a leading recycling facility to become a model for sustainable development and community empowerment nationally." Chaminda Upul of Siyam World agreed with Hafsath's vision and

emphasized the importance of collaboration to achieve long-term systemic change. "We always have to start small but plan big ... collaboration is the key to systemic change."

Clean Maldives and their partners are providing a platform to share knowledge and demonstrate to others that waste can be a resource, and thereby pave the way for a more resilient future.

"This project represents an example of how sustainability can be a catalyst for inclusive development and empower communities," Hafsath said.

Ultimately, the focus will be able to shift to "educate the next generation more and then make sustainable ways of living a norm," Sana said.



AltasPak Waste Management transforms plastic waste into manhole covers that cover sewerage systems,

 [Hyderabad](#)

Transforming plastic waste into products that benefit communities

Altas Pak Waste Management | From Waste to Credits: Circularity in Plastic Waste Management

In Hyderabad, AltasPakWaste Management is uplifting the lives of informal waste workers who collect plastic waste and transforming the waste they collect into manhole covers that cover sewerage systems, delivering social, economic health and environmental benefits to communities.

Environmental Expert Samina Parveen said, “After collecting shopping bags from different zones, different houses, we then recycle, crush, melt, and produce our innovative solutions that are manhole covers.”

Beyond manhole covers, AltasPak has expanded its product line to include other plastic-recycled construction materials, using the same core process of collecting, shredding, melting, and moulding plastic waste into durable infrastructure components.

“We have built a structured collection system working across zones and households to

gather plastic that would otherwise end up in landfills or waterways. This material then feeds directly into our production process,” Parveen said.

AltasPak’s recycling facility in Hyderabad employs workers from nearby communities on a structured conveyor belt sorting system, where plastic shopping bags are manually sorted and segregated by type before being processed.

Workers at the facility are equipped with protective gear including gloves, masks, and shoes, and receive monthly incentive payments that provide income stability. AltasPak has also established structured waste collection routes across different zones in Hyderabad, ensuring a consistent supply of raw material feeding directly into the manufacturing process.

Once sorted, the collected plastic bags are crushed, melted, and moulded into manhole covers. These covers are installed over sewerage systems across Hyderabad, replacing conventional materials with a locally produced, recycled alternative. The end product closes the loop: plastic collected from the city’s streets becomes infrastructure embedded back into the city’s ground.



ISPES's approach centres on building the full infrastructure chain: collection networks, processing facilities, recycled product manufacturing, and digital management systems.

Hyderabad

Building Pakistan's Plastic Recycling Infrastructure: Ecobricks, Reverse Vending Machines, and Digital Waste Mapping

ISP Environmental Solutions (Private) Limited | Trash has Value – Recycling plastic waste to Eco green Tiles/Bricks

In Hyderabad, ISP Environmental Solutions (ISPES) has developed one of Pakistan's most integrated plastic waste management systems, combining physical collection

infrastructure, a recycled construction materials facility, and digital tools to map and manage the plastic value chain.

Dr. Zillay Mariam, CEO of ISPES, co-founded the company with colleagues Gulfam Abid and Wajid Ali, who together recognized a critical gap in sustainable waste collection, resource recovery, and value-added recycling infrastructure in Pakistan.

Starting from a rented site and processing waste from 2,200 households, ISPES rapidly built out a collection and recycling operation that now covers more than 66,000 households, the commercial sector, and 45 corporate clients, diverting over 1,500 tons of plastic from landfills.



Ecobrick is an entirely new product in the market. It has plastic as well as other waste materials along with cement and sand that we use to make pavers

ISPES's approach centres on building the full infrastructure chain: collection networks, processing facilities, recycled product manufacturing, and digital management systems.

The results are measurable: diversion of plastic from landfills has reduced methane and carbon emissions, while the conversion of waste into construction materials has created a new local supply chain for sustainable building products.

In collaboration with Entertech Group of Companies, ISPES launched research and

development initiatives to convert plastic waste into ecobricks and used technology to map waste management platforms and build a network of stakeholders, scrap dealers, and reverse vending machines.

With the \$870,000 grant under the PLEASE Project, ISPES was able to deploy the infrastructure they had researched, commissioning the Ecobricks Production Facility and rolling out reverse vending machines across communities.

The reverse vending machines, where community members can bring their plastic waste and be rewarded through an App, have paved the way for community behaviour change. Dr Mariam believed in the role of youth in plastic waste management. "The goal of the reverse vending machine is simple: to make our youth understand that plastic is not trash. We should make our young people see the value of waste that must be sorted at source."

ISPES also established a plastic recycling ECO bricks Production Facility that has diverted more than 8,0000 tons of plastic waste into a sustainable construction material.

"Ecobrick is an entirely new product in the market. It has plastic as well as other waste materials along with cement and sand that we use to make pavers," Dr Mariam said.

The Government of Punjab is now engaging ISPES to consult on developing guidelines for the implementation of plastic waste management and has signed an MOU with the company to support Punjab's first Green Credit Program.

Today, ISPES stands as a model for integrated plastic waste management in South Asia — demonstrating how combining digital infrastructure, physical collection networks, and local manufacturing can create a self-reinforcing system that keeps plastic in the economy and out of the environment.

A close-up, profile view of a woman with dark hair, focused on her work. She is wearing a light-colored, textured garment. The background is blurred, showing what appears to be a sewing machine and some fabric. The lighting is soft and focused on her face and hands.

HerStory: Women at the heart of Circular Economy

Women make up nearly half of South Asia's population, roughly 49–50 percent of the region's nearly two billion people. Yet their participation in the formal labor market remains disproportionately low. Only about 32–34 percent of working-age women in South Asia are part of the labor force, compared to around 77 percent of men, making the region one of the most unequal in the world in terms of gender participation in work (World Bank, 2024)

Despite this gap, women are heavily represented in informal and often overlooked sectors such as waste collection, sorting, and recycling. In many South Asian cities, women form the backbone of community-level waste management systems, contributing to environmental sustainability while supporting their households. Bringing women to the center of job creation in the waste management value chain, through training, technology access, fair market linkages, and formal recognition, can unlock both economic and social benefits. Strengthening women's roles in this sector not only improves recycling systems but also creates pathways for dignified employment, income stability, and improved quality of life for millions of women and their communities across the region.

(World Bank)



Together with designer Sangee Wongu, Tring runs Daza's Toy, a local handicraft business.

Bhutanese Women weaving a circular futuretransforming waste into sustainable opportunities

Clean Bhutan | Polyester Wool Bhutan

In a small workshop in Bhutan, brightly colored soft toys and cushions line the shelves. Looking warm and inviting, the toys are stuffed with soft polyester wool. Unknown to many, the toys carry something

unexpected within them: recycled plastic bottles.

"People, from adults to children, love soft toys and cushions," said Tring Demo. "You won't believe that we make these with recycled plastics"

Together with designer Sangee Wongu, Tring runs Daza's Toy, a local handicraft business. Sangee brings creativity and design; Tring leads production. But their work took on new meaning when they partnered with



Clean Bhutan is the first-ever initiative in Bhutan that produces polyester wool from PS and PET plastic waste.

Clean Bhutan - the country's first initiative to produce polyester wool from PS and PET plastic waste.

For years, Bhutan has struggled with growing plastic imports and limited recycling capacity. Clean Bhutan saw an opportunity where others saw trash. By transforming discarded bottles into soft polyester wool, the initiative created a new local value chain, one that links waste collection to production, entrepreneurship, and community livelihoods.

"We believe in the power of making things locally," Sangee shares, highlighting the good that comes from their teamwork. "By using polyester wool crafted from recycled plastic here in Bhutan, we can skip the headaches of shipping and cut down on import costs. Even better, we're helping to keep our environment clean and boosting our local economy."

For Tring, the shift is about changing mindsets. "Most people just see plastic as rubbish, but we see a possibility. We're showing that with a bit of imagination and hard work, discarded stuff can become beautiful, useful things."

The Clean Bhutan initiative has been a game-changer in empowering women, championing sustainability, building economic empowerment in local communities and developing a circular economy in Bhutan. Clean Bhutan is the first-ever initiative in Bhutan that produces polyester wool PS and PET plastic waste.

Dechen Choden, a single mother from the Trashigang district in eastern Bhutan, once struggled to support her two children through traditional weaving skills. After training with Clean Bhutan, she now works as a production manager at the PET shredding and polyester wool-making plant, mentoring young women workers helping them build stable incomes.

"Most people just see plastic as rubbish, but we see a possibility."

The founder of Clean Bhutan, Nedup Tshering, believes the initiative is more than recycling. "Not many people in Bhutan know that polyester wool is made out of PET bottles. We are building a circular economy, turning waste into resources and resources into jobs.

Clean Bhutan's vision is to expand this initiative to include the production of clothing made from recycled plastic, opening new avenues for local entrepreneurship. Through cleanup campaigns, skills training, and partnerships with women-led businesses, Clean Bhutan is reshaping how communities view waste.



MACCS trained local women to sew reusable shopping bags and color-coded sorting bags used throughout the island, creating job opportunities while replacing plastic.

Sewing Change: How Women in the Maldives Are Stitching a Plastic-Free Future

Maldives Authentic Crafts Cooperative Society (MACCS) | Improving the wellbeing of H. Dh. Kulhudhuffushi people and ocean through plastic pollution prevention

In the Maldives with its turquoise waters and pristine beaches, a quieter crisis has been unfolding. Plastic bottles wash ashore daily, waste sites overflow, and on islands where the ocean is both livelihood and identity, pollution has become impossible to ignore. On Kulhudhuffushi Island in the north, the Maldives Authentic Crafts Cooperative Society (MACCS) decided that the solution had to begin at home. And for them, that meant beginning with women.

As a women-led NGO, MACCS focused on empowering women with practical skill-

building opportunities as part of its overall strategy. MACCS trained local women to sew reusable shopping bags and color-coded sorting bags used throughout the island. By doing so, they created job opportunities while replacing plastic. "We are creating jobs for home-based workers," says MACCS Chairperson Aminath Abdulla. "The bags they produce are being used every day instead of plastic bags."

In doing so, MACCS turned a waste reduction initiative into a women's economic empowerment programme, where every bag sewn represented both a plastic bag avoided and an income earned.

MACCS went further still, tackling a source of plastic waste that rarely features in environmental conversations: disposable menstrual products. Through dedicated training sessions and safe spaces for open dialogue, MACCS introduced women to reusable menstrual product alternatives that had previously gone unaddressed in community programmes.

The impact was immediate and personal. "It has been almost three months since I began using the menstrual cup," said Khadheeja Moosa, President of the Women's Development Committee. "It made my daily routine so much simpler. I wish I had learned this earlier."

By addressing this overlooked dimension of plastic consumption, MACCS demonstrated a rare quality in environmental programmes: the willingness to meet women where their lives actually are.

With these initiatives, MACCS went beyond building just a waste management system in Kulhudhuffushi, with a model in which women are not passive beneficiaries of environmental initiatives, but active architects of them. They design the solutions, produce the alternatives, lead the conversations, and sustain the outcomes.

"We are creating jobs for home-based workers. The bags they produce are being used every day instead of plastic bags."



IMS training local communities to weave ghost gear into colourful baskets, shopping bags, and decorative items

From Waste to Worth: How One Woman in Chattogram is Turning Ghost Gear into a Livelihood

Institute of Marine Sciences (IMS), University of Chittagong (CU) | Community-based Reduction of Plastic Pollution: Case of Circular Economy and Biodegradable Products in Bangladesh

Bangladesh is home to one of the largest fishing communities in the world with tens of millions more dependent on fishing and its related industries for their livelihoods. Along the coastline of Bangladesh, fishing is more than an occupation; it is a way of life. Stretching across the Bay of Bengal, the country's coastal villages pulse with the rhythm of the tides. Generations of families have built their lives around the sea, with men casting nets at dawn and women

managing households that depend entirely on what the water gives back. In villages like Kattoli in Chattogram, the smell of salt and fish is ever-present, boats line the shore each evening, and the market hum of a good catch can lift an entire neighbourhood's spirits.

But alongside the boats and the nets comes a quieter, more insidious

crisis: thousands of tonnes of fishing gear lost, abandoned, or discarded each season, drifting beneath the surface, entangling marine life, and washing ashore on the same beaches where children play and women gather. These ghost gears are an environmental wound that coastal

"I never thought I could earn from something people throw away."



Through education, training, and workshops, community members learned to identify, reduce, and repurpose abandoned fishing nets (ghost gear), turning a pollution hazard into an opportunity.

communities live alongside, often without the tools or knowledge to address them.

The Institute of Marine Sciences (IMS) at the University of Chittagong is working to change the relationship between fishing communities and the gear that pollutes their waters. Through the PLEASE project, IMS launched a community-driven initiative targeting Abandoned, Lost, or Discarded Fishing Gear (ALDFG). Rather than imposing top-down solutions, IMS placed local fishers, women, and coastal stakeholders at the heart of the response. Through targeted awareness campaigns, hands-on training sessions, workshops, and focus group discussions, community members were equipped to identify, reduce, and repurpose ghost gear, transforming a pollution problem into an opportunity.

The initiative also explored ALDFG removal as a viable business model, demonstrating that environmental action and economic opportunity need not be in tension. What emerged was a community-owned, financially grounded approach to marine conservation with the potential to be replicated across the region.

For years, 45-year-old homemaker Dashami's family relied solely on her husband Krisnapad, a fisherman bringing home BDT 400–500 a day; rarely enough to comfortably support their four children. Like many women in her community, Dashami longed to contribute but found few viable options.

That changed when she joined an IMS training on transforming discarded fishing gear into handicrafts. She learned to clean and process old nets and ropes, weave them into new forms, and stitch them into marketable goods. The sessions also covered practical skills including design, pricing, and understanding customer preferences that bridged the gap between craft and commerce.

Back home, Dashami began experimenting. Piece by piece, she turned what others discarded into shopping bags, mats, baskets, and decorative items. Her neighbours were astonished. At the local market, buyers were drawn to the novelty and craft of her creations.

Today, Dashami weaves those same ghost gear into colourful baskets, shopping bags, and decorative items that sell at her local market, earning an additional BDT 200–500 each week. The income is modest, but its meaning runs deeper. "I never thought I could earn from something people throw away," she said with a smile.

Dashami's journey has become a quiet catalyst. Women in her community now come to her to learn the craft, drawn by the possibility that they too can turn waste into worth. What began with one woman's determination is growing into a grassroots movement in which women are emerging as leaders in both environmental protection and household resilience.



Nepal's Tribhuvan University is driving plastic waste research by installing recycling equipment and training local women to transform plastic waste into marketable products.

University's work transforming waste also transforms women's lives

Department of Applied Sciences & Chemical Engineering, Tribhuvan University | Waste to Wealth: Plastic Free Himalayan Rivers to Advanced Functional Materials

Tribhuvan University, Nepal's oldest and largest university, is involved in several research and development activities around plastic waste management. One of the

university's activities involves installing equipment and training women to use it to transform plastic waste into products sold in local markets.

In the remote Shikhar Municipality of Doti, the university partnered with a community-led green initiative to produce vases from waste plastics using an extruder machine and to produce bowls and plates from leaves using a hot press machine. The biodegradable plates and bowls have an impact on reducing plastic use.

Thirty women who had never operated machinery before were trained to use the machines to transform plastic waste into vases and to produce the biodegradable bowls and plates.

Mrs. Radhika Devi Pant from Shikhar Municipality said, "Earlier, we used to make 'Duna Tapari' by hand in the past, but that tradition disappeared with plastic. Learning from the awareness training about how harmful plastic is, we have been trying to change our behaviour. We are now using a hot press machine to bring back our traditional 'Duna Tapari' leaf plates. This machine will also save us time."

The women learned technical skills and also began developing small-scale enterprises to make and sell the products, resulting in their economic empowerment.

The labor-saving technology significantly reduced the women's physical workload, and the finished biodegradable products were well received in local markets. This initiative has proven how circular economy innovations can simultaneously promote sustainability and gender inclusion in rural Nepal.





The Negombo Recycling Club is spearheading the growth of women-owned Material Recovery Facilities in Sri Lanka

Women Leading Sri Lanka's Circular Future

Negombo Recycling Club (PVT) Ltd

| Building a Blue Lanka by Uplifting Communities- BLUECAP

Determined women stepping into roles once deemed unsuitable for them are developing solutions to plastic pollution in Sri Lanka. Across the island, a quiet revolution is taking root, driven by women-owned Material Recovery Facilities (MRF) that are utilizing waste to fuel their economic independence and build cleaner, healthier communities. This movement is spearheaded by initiatives supported by the Negombo Recycling Club (NRC) and INSEE Ecocycle Lanka.

In Balapitiya, a community in the Southern Province of Sri Lanka, this transformation began with the simplest act of defiance against the norm. A young girl named Thiseni de Silva, driven by a sense of responsibility,

started knocking on doors. She was not selling anything; she was asking neighbors to stop burning plastic and start collecting it. Met with skepticism and doors shut in her face, Thiseni's only steadfast ally was her mother, Biso Manike, a retired teacher with a powerful passion for social work. Their combined efforts, a blend of youthful passion and mature conviction, slowly began to dismantle the habit of generations. Their persistence led to the creation of the Balapitiya MRF, a facility that quickly became more than just a place to collect waste; it became a sanctuary where women could reclaim their independence.

Biso Manike, the MRF owner, stepped forward to lead a 10-member team, 8 of whom are women, demonstrating operational excellence in all aspects of the operation, from sorting and cleaning to managing machinery. "Seeing these women build their futures while making our town



NRC's BLUECAP project provided essential resources like electric bicycles for waste collection among local communities

cleaner is a feeling I can't put into words." Thiseni remains steadfast. "As youth, this is our responsibility. We need to protect our country and our environment. Every plastic bottle we collect is a step toward a cleaner and a sustainable future," she said.

The project gained a significant boost from the NRC's BLUECAP project, which provided essential resources like a baling machine and electric bicycles, enhancing efficiency and financial stability. The impact is clear: the MRF is profitable and ensures 100% of workers are

protected, showcasing a blueprint for success.

This template of empowerment is being replicated across Sri Lanka by NRC, demonstrating its scalability. In Trincomalee, Sasirecka Naguleshwaran, a dedicated development practitioner, was inspired by the BLUECAP goal to empower women entrepreneurs. She established the Trinco Recycling Hub. Now the director of the district's first MRF, she employs women and uses an e-bike for wider collections.

"The Trinco Recycling Hub has brought a remarkable transformation to my life and the Trincomalee community," Sasirecka said. "As a woman entrepreneur, leading this facility has strengthened my confidence, leadership, and financial stability, enabling me to support my family while empowering other women to take part in sustainable development." The Hub now collects between 1,000 kg and 2,000 kg of plastic monthly, significantly reducing the pollution that once plagued their beaches and sea.

"Every plastic bottle we collect is a step toward a cleaner and a sustainable future."



Waste collection bins installed in neighborhoods



In the North West of Sri Lanka, INSEE Ecocycle set out to empower women for circular plastic economy with the launch of Green Cycle Solution MRF

Similarly, in Batticaloa, Dieniel ThavashiViji, a mother of two, expanded her informal collection work into the Eastern Recycling Centre MRF. Initially hesitant, Dieniel was bolstered by the training and exposure provided by the BLUECAP project.

"Being an owner of a business is a new experience for me, but the training and connection to other women entrepreneurs boosted my confidence and skills," she said.

Her MRF now collects over 3,000 kg of plastic a month, and she has created employment for two other women, one a mother, and another a woman without family support, and the stable income employment improves their security and empowerment.

The BLUECAP initiative by NRC has established five women-owned MRF across various districts in Sri Lanka. Bisomenike, Sasirecka and Dieniel's stories show how women are leading from the front, and becoming key players in regional pollution solutions.

INSEE Ecocycle | Empowering Women for Circular Plastic Economy: A Sustainable Solution to Tackle Mixed Plastics Recycling Model in Sri Lanka

In a quiet village in the North Western Province of Sri Lanka, Gayani De Silva's journey began with a simple desire: to use her extra time wisely after her sons grew older. Encouraged by her husband, she partnered with INSEE Ecocycle Lanka's initiative Empowering Women for Circular Plastic Economy, and launched the Green Cycle Solution MRF in Puttalam.

For Gayani, the MRF is about dignity and impact. "I am mostly happy because I was able to give the women in the village jobs when there was an unemployment issue. They were dispirited because they didn't have income." By providing stable employment and a monthly income, the MRF has eased the emotional and financial burden on these women, allowing them to support their children's education and uplift their status in society.

From Invisible to Invaluable: Recognizing the Informal Waste sector

On the streets of Colombo, in the neighbourhoods of Karachi, along the waterways of Dhaka, and in the markets of Kathmandu, informal waste workers rise before dawn to do the work that keeps communities from being overwhelmed by their own waste. Long before formal waste management systems existed, and still today where those systems fall far short, these workers have been the invisible backbone of the circular economy, collecting, sorting, and recycling materials that would otherwise end up in rivers, oceans, and overflowing landfills. In one of the world's most densely populated regions, their role is not marginal but essential. Yet despite the scale of their contribution, informal waste workers remain among the most economically vulnerable, socially marginalized, and least protected members of society across SACEP's member states. The PLEASE project is committed to changing that. By supporting initiatives that improve livelihoods, strengthen recognition, and build the organizational capacity of informal waste workers, PLEASE is working to ensure that South Asia's transition to sustainable waste management is one that is built with the people who have always been at its frontlines.





48-year-old Rahela Begum participated in training on safe plastic waste collection and the sustainable management of single-use plastics

From Struggle to Success: How Training Transformed a Bangladeshi Waste Collector's Life and Community

Arannayk Foundation/RedOrange Communications | Plastic Reduction Initiative in Sundarbans Transboundary International Natural Ecosystems (PRISTINE)

Waste collectors, like 48-year-old Rahela Begum, have faced many difficulties earning a living and staying safe and healthy while collecting rubbish in their communities.

Rahela has worked as a waste collector for five years. The work is demanding, and her job led to injuries and health issues, including shortness of breath, itching, abdominal pain, and skin diseases. Her income was low, around 5,000 Tk (~41 USD) per month, and as her medical expenses increased, so did the financial burden on her family.

Rahela's life began to change when she participated in training on safe plastic waste collection and the sustainable management of single-use plastics, delivered by the PRISTINE Project.

She learnt about innovative plastic waste management strategies and gained practical skills on how to handle and segregate plastic waste safely and efficiently. She also received personal protective equipment - a mask, vest, gloves, and protective glasses, plus access to primary healthcare, free medications, and menstrual hygiene materials.

Rahela's health improved, and her income almost doubled after she began applying her new waste collection skills. She now collects about 3kg of plastic every day - multi-layered plastics, single-use plastics, bottles, and metallic items - which she sorts and delivers to the project's collection hub.

Rahela said the training has helped her to become more efficient at picking and sorting waste materials. So far, she has submitted about 300kg of sorted plastic at the project collection hub and earns 8,000-9,000 Tk (~74 USD) each month.

She said the extra income meant she could buy better quality food for her family, including vegetables, fish, and snacks for her children. Her improved financial stability has also changed her family dynamics, with her husband proudly acknowledging her contribution.

Rahela said she has also gained respect within her community.

"People used to ask me like 'what do you do with the rubbish? no one buys them'. But now the market traders and my family encourage me. One market trader even offered me a small storage space to keep the waste I collect, which helps me to be more efficient," Rahela said.

She has become a role model in her community, inspiring other women to take up waste collection as a viable and respectable profession.

"People used to ask me, 'What do you do with the rubbish?' But now the market traders and my family encourage me."



BPCL's Recycling
Business Units
(RBU)

Partnerships powering Bangladesh's Plastic Recycling Revolution

Bangladesh Petrochemical Company Limited | Sustainable and innovative solutions to reduce the flow of plastic pollution in Bangladesh

"Every day, I sort plastic. A simple work, yet this helps me build a stable future for my children, piece by piece." When Mohsena Begum sorts plastic bottles at a recycling hub in Cox's Bazar, she no longer sees herself as an invisible "tokai", waste collector. Instead, she is a 'Cleanliness Warrior', earning a fair income, sending her daughter to school, and contributing to a cleaner coastline in Bangladesh.

Her transformation is the result of a partnership model that is reshaping how Bangladesh tackles plastic waste. At its core is a three-way alliance between Bangladesh Petrochemical Company Limited (BPCL), local social enterprise TRACT, and the development NGO Centre for Development Innovation and Practices (CDIP).

For decades, the backbone of Bangladesh's recycling effort has been the street collectors, often women, invisible and taken advantage of. Known locally as *tokais*, they worked in dangerous conditions for scraps of cash, earnings controlled by layers of demanding middlemen.

The Recycling Business Unit (RBU) model, pioneered by BPCL under the PLEASE Project, addresses this by formalizing the chain.



The RBU model is about moving from a chaotic informal sector to a structured one, from pollution to prosperity, and from invisibility to dignity

The partnership design is a key strength of the initiative. “The RBU model isn’t just about recycling; it’s rebuilding the entire system,” said Khadem Mahmud Yusuf is Managing Director and CEO of Bangladesh Petrochemical Company Limited (BPCL).

In the partnership, BPCL provides the market backbone with guaranteed PET bottle buy-back and modern recycling capacity. TRACT manages daily RBU operations in Cox’s Bazar, building trust with collectors and handling logistics. CDIP delivers childcare, health camps, and training so that workers, especially women, can participate with dignity.

Cox’s Bazar RBU Hub Assistant Borhan Uddin said the partnership worked well because each partner had complementary strengths. “BPCL ensures the market, TRACT manages operations, and CDIP ensures the well-being of people. Together, we’re proving that waste is not just a burden it’s a chance to build a better future,” Mr Uddin said.

For workers like Mohsena, the partnership has meant more than wages. With free childcare, she can work without fear for her daughter’s safety. With health camps and personal protective equipment, she works in conditions far safer than the informal system. And with transparent, fair pricing, she can save money and think beyond daily survival.

“Before, I worked all day and barely earned enough to eat,” Mohensa said. “Now I can save money, send my daughter to school, and feel proud that my work helps keep Cox’s Bazar clean.”

This model of shared responsibility, corporate, local, and social, has turned workers from marginalized tokais into recognized Clean Environment Workers or Cleanliness Warriors.

The RBU partnership model has delivered results as of (xxx):

- Over 60,000kg of ocean-bound plastic collected in Cox’s Bazar.
- Seven RBUs were established in Cox’s Bazar, Chattogram, Bagura, Feni, Rupganj, and Siddhirganj, with 20 planned by 2027.
- Social services provided through childcare facilities and health camps, and training in financial literacy and safety.
- Community recognition achieved as waste workers become seen as contributors to environmental protection.

TRACT’s founder Omayr Khan said: “Our mission has always been to remove ocean-bound plastic from Cox’s Bazar. Partnering with BPCL through the PLEASE Project allowed us to make that vision real while also improving lives. And through this partnership, we believe that every person who picks up that bottle is a quiet hero, building a better future.”



Beyond fair wages, the RBUs provide IWWs with free childcare, safer working conditions, and transparent pricing

As Bangladesh looks to expand the RBU model nationwide, this alliance offers more than a recycling solution. The RBU model is about moving from a chaotic informal sector to a structured one, from pollution to prosperity, and from invisibility to dignity. It's a blueprint for inclusive, resilient partnerships — proving that when diverse actors work together, they can transform both waste streams and human lives.



EcoWaste Solutions employs waste workers to collect landfill plastics and utilizes modern facility machinery to improve material sorting and recycling management.

Turning Waste into Hope: Bhutanese Organizations Create Jobs While Fighting Plastic Pollution

Eco Waste Solution | Advancing Waste Management through a Material Recovery Facility in Wangdue Phodrang

Proactive actions taken by organizations in Bhutan are making a difference in people's lives and changing perceptions of plastic waste as well as demonstrating a commitment to sustainable plastic waste management.

EcoWaste Solution is one of these organizations. EcoWaste Solutions employs

waste workers to collect plastic that can be recycled from landfill and processes it for recycling at the organization's facility where modern machinery has been installed to improve the management and sorting of materials.

"The municipality collects the waste and disposes the waste directly into landfill. Our employees go to the landfill and sort all the recyclable materials that have value. All the PET, HDPE and LDPE waste are compressed and supplied to the local recyclers," Eco Waste Solution General Manager Kinley Dorj said. "We have so many challenges. Every tonne of waste that we divert from landfill brings us closer to a greener and cleaner Bhutan."



Despite being vital to Nepal's fight against plastic pollution, waste collectors and sorters have long faced stigma, discrimination, and unsafe working conditions.

Greener Way | Bhutan Waste Banks (BWB): An innovative way to reduce, reuse and recycle plastic waste in Bhutan

In Thimphu, Bhutan, a PLEASE project grant is enabling GreenerWay to tackle the waste problem while providing employment opportunities.

Rinchen Tshomo, a 22-year-old single mother, is one of the people whose life has improved as a result of GreenerWay's initiative. Rinchen works as a manager at a local waste collection site, widely known as 'waste bank', managed by GreenerWay.

Before she was employed by GreenerWay, Rinchen struggled to raise her 18-month old son and care for her elderly mother because there were few jobs available to her. Money was short and her days were uncertain.

"I didn't have the luxury to choose jobs. I just took whatever work came my way, as long as it put food on our table," Rinchen said. When she worked as a waitress at a karaoke restaurant she felt the judgement

of her conservative community. She said the whispers and judgment stung, but she persisted so she could support her son and mother. "I wasn't ashamed of working hard," she said. "I was just ashamed of giving up."

Everything changed when Rinchen was offered a manager position by GreenerWay. The job provided her with steady pay, dignity, and purpose. For the first time, she could stand tall. She was no longer just surviving; she was leading.

Inspired by her work, she also began helping her neighbors learn how to sort their waste for recycling and built awareness in her community about the damaging effect plastic waste had on their environment.

"As I'm also taking care of marketing for this waste bank, I go around the town's mini marts and restaurants, and encourage them to visit the waste collection site," Rinchen said.

Shop owners and householders receive a market price based on the type of waste they bring to the site. "Waste is not just garbage. We can make a choice. This waste can turn into something useful if we are all together." Her voice now carries confidence, reflecting the dignity she feels through her work in the sector. "You respect your work; in turn, people will learn to respect you," she said. With regular working hours, she can now manage her time well enough to spend quality time with her son.

"I started with nothing, but I realized I learned a lot. You know, jobs are not all about the money. Now, I have a job I'm proud of, a community that supports us, helps us to manage this plastic waste, and my son will grow up in a promising land of a plastic waste-free, cleaner, and healthier environment."



Biocomp is a social enterprise recycling low-grade plastic waste into products of value

From Waste to Worth: Maya's Impact on Nepal's Waste Sector

Biocomp Nepal Pvt. Ltd | Reduce and Intercept, Value add through the Establishment of a Recycling plant for low-grade plastics and used beverage cartons in Nepal RIVER+

The people who collect and sort plastic waste are key in Nepal's battle against plastic pollution, but they have long suffered stigma, discrimination, and unsafe work conditions.

This is changing thanks to the work of social enterprises, private sector businesses, and universities working in Nepal's waste management sector. Not only is their work having a positive impact on the environment, but they are also changing the way society views waste workers and the way waste workers see themselves.

Biocomp Community Mobiliser Maya Tamang is one of those contributing to this

change, and Maya knows well the stigma and hardship waste workers face.

Maya grew up in a family of waste workers, and as a child, she spent her days helping her parents pick up plastic waste, work her family relied on for their survival.

She remembers how her community viewed waste management as a dirty job, reserved for marginalised people. She said people whispered cruel comments and looked at her with disgust. This stereotype left Maya and her family feeling isolated and disrespected, often ridiculed by those who saw them as 'dirty' for doing the work that others overlooked.

"When we used to sift through the waste on the streets, sometimes the passers-by spat on the ground near where we worked."

"When we used to sift through the waste on



the streets, sometimes the passers-by spat on the ground near where we worked. It made me feel just like the garbage around me,” she said.

Maya completed her education and was committed to waste management, knowing how important it was for her community, society, and the environment. She was also determined to show that the work of a waste worker was vital and a job worthy of respect.

When she encountered Biocomp, a social enterprise recycling low-grade plastic waste into products of value, she knew she had found her platform. Through her training at Biocomp, something she had always known was reinforced: waste workers were integral to the larger solutions to Nepal’s plastic waste problems.

“I attended countless trainings before coming to Biocomp, but the Her Safety training stood out. The things I learned here are useful, and now I can share important safety tips with my fellow informal waste workers,” Maya said.

As a community mobiliser at Biocomp, Maya advocates for the rights and respect of informal waste workers (IWW). With her

coordination and collaboration, Biocomp mobilized 500 informal waste workers and delivered practical training related to plastic waste management, protection, and gender, equality, disability, and social inclusion (GEDSI), as well as helping workers to attend workshops on health insurance and personal protective equipment.

Through ‘Her Safety’ training, she brought together 45 female IWW and helped them access information about their rights relating to civil registration and government social protection, how to handle waste safely, how to manage their health, advice about health insurance, details relating to gender-based violence, guidance about sexual reproductive health, emotional wellbeing, and how to migrate safely.

Slowly, Maya has seen a shift in how waste workers view themselves. They have begun to feel empowered. More importantly, the stigma surrounding their work has started to dissolve.

Other organisations working in Nepal’s waste management sector are also empowering waste workers.



Doko Recyclers trained 302 IWW to separate low-value plastics (LVP) and multilayer plastics (MLP) that are then processed at the company's plastic recovery facility.

Low-value plastic recycling boosts waste workers' livelihoods

Doko Recyclers | Reclaiming the Value of Plastic Waste through a Plastic Recovery Facility (PRF)

Doko Recyclers established a plastic recovery facility that can process up to 49 tons of plastic per day. The company developed a partnership with Nepal Fulbari Waste 3R Pollution Control Service, a private waste management company that services the Bhaktapur municipality and its population of around 450,000.

Doko Recyclers trained 302 IWW to separate low-value plastics (LVP) and multilayer plastics (MLP) that are then processed at the company's plastic recovery facility. The collected plastic waste is first shredded at the facility and then sent to waste entrepreneurs Klenit, Paramendu, and Biocomp. Klenit and

Paramendu create a range of recycled plastic products, and Biocomp's production facility creates plastic composite boards.

Anita Rai, 25, a waste worker at Nepal Fulbari, has been separating Low Value Plastics (LVPs) and Multilayer Plastics (MLPs) since her training with Doko Recyclers. "We learned how to segregate LVP and MLP through training with Doko. While the workload has increased, we also receive additional income from the plastics," Anita said. She has been able to start a small pig farm to supplement her income as a waste worker. She now has 11 pigs and sells six or seven every six months. As she segregates plastic waste, she also sets aside organic waste for her pig farm.

Anita and her fellow waste workers at Doko also received training on gender equality and social inclusion (GESI), occupational health and safety (OHS), and protection against sexual exploitation and abuse (PSEA) to bolster their livelihoods.

Advocacy in Action: Building the regulatory landscape

Across South Asia, translating environmental concern into lasting change requires more than awareness; it requires action at the policy level. The region's diversity of governance systems, from the small island state of the Maldives to the federal structures of India and Pakistan, means that there is no single pathway to stronger environmental regulation. Yet across this diversity, a common thread runs through the most impactful change: communities and civil society organizations that are equipped to engage with decision-makers, present evidence, and advocate for the policies that reflect the realities on the ground.

The PLEASE project has worked alongside governments, grantees, and local advocates across SACEP's member states to strengthen this capacity, supporting the development of policy frameworks, facilitating dialogue between communities and institutions, and ensuring that the momentum built at the grassroots level finds its way into the governance structures that shape environmental outcomes for millions of people across the region.





The Island Climate Initiative launched Sri Lanka's first and only dedicated plastics testing facility - GP Labs

Sri Lanka is Setting New Standards for Recycled Plastic

The Island Climate Initiative (ICI) | Overcoming Barriers, Taking Critical Steps: Advancing Plastic Recycling in Sri Lanka for its Circular Use

[Colombo](#)

In Sri Lanka, one of the biggest barriers to reducing plastic pollution was not a lack of will, but a lack of trust. Companies were keen to use recycled plastic in their packaging, but without any formal system to verify its quality, they could not be certain it met the standards their products demanded. The recycling sector, meanwhile, had no way to prove otherwise. The result was a cycle that kept virgin plastic firmly in demand and recycled material on the margins.

The Island Climate Initiative (ICI) identified this gap not just as a technical problem, but as a policy and market failure, and set about fixing it from the ground up.

ICI's response was the launch of GP Labs, Sri Lanka's first and only dedicated plastics testing facility, paired with 'GP Certified' Sri Lanka's first formal certification standard for high-quality recycled plastics. Operated by GP Certified, the lab is a national first, designed to inject scientific precision and international quality standards into the entire polymer manufacturing and recycling ecosystem.

Together, these two tools are creating an enforceable, science-backed standard that gives the private sector the confidence to change its behaviour.

The testing facility offers comprehensive testing for recycled plastics, including analysis of properties like tensile strength, melt flow rate, ash content, and heavy metals, the impurities that could render recycled materials unusable. It tests common plastic types - PET, HDPE, LDPE, PP, PVC, and PS - in various forms, ensuring that every pellet and flake that leaves a certified recycler is fit for purpose.

GP Certified Chief Technical Officer Yugantha Perera said GP Labs was a major step forward for Sri Lanka's recycling and manufacturing industries. "It not only promotes quality but also builds the credibility of recycled plastics for local and global markets."

The certification system works across the entire supply chain, from small-scale collectors and sorters through to large recyclers, packaging manufacturers, and fast-moving consumer goods companies. By auditing both the recycling process and the end product, ICI has created a

"By creating standards and auditing the recycling process as well as the product, ICI gives manufacturers the confidence to buy materials that are certified."

credible quality assurance framework that manufacturers can rely on. "By creating standards and auditing the recycling process as well as the product, ICI gives manufacturers the confidence to buy materials that are certified," says Iroshini Vedage, ICI's Programme Director for GP Labs.



Operated by GP Certified, the lab is a national first, designed to inject scientific precision and international quality standards into the entire polymer manufacturing and recycling ecosystem

The policy lever at the heart of this system is the Green Label - a mark that will be affixed to packaging containing a certified percentage of recycled plastic. The label is both a consumer signal and a market incentive, designed to shift purchasing behaviour and reduce Sri Lanka's dependence on imported virgin plastic. It is, in effect, a private sector standard with public benefit; the kind of practical policy mechanism that can drive systemic change without waiting for legislation to catch up.

Early adopters are already demonstrating what is possible. Antler Industries, a producer of car care and industrial products, has begun incorporating recycled materials into their packaging at varying percentages, working closely with ICI to find the right formulation for each product line. "One of

our key sustainability goals is to use recycled materials in our packaging," says Thejani Saubhagya, a chemist in Antler's Research and Development department.

For ICI, the urgency behind this work is personal as much as it is professional. "If you look at the past decade or two, you see a lot of pollution happening," reflects Vedage. "I think this is the right time, and innovation is the way to go. We have to use whatever plastic is already in the environment and keep it in the loop."

By establishing GP Labs and the certification framework, ICI has laid the policy infrastructure for a functioning circular economy in Sri Lanka, creating the conditions under which the private sector can lead, and the market can reward, the right choices.



Save a Life
partnered with
one of Jaffna's
local government
bodies
responsible
for waste
management

 Jaffna

Jaffna Rises: Pioneering a Plastic-Waste Free Future Through Collaborative Governance

Save a Life | Plastic Zero Initiative –
Empowering Institutions and Communities
for Sustainable Change

Up in the Northern Province of the Island, the vibrant and resilient Jaffna Peninsula faces a growing environmental threat from plastic pollution. Plastic waste, driven by rising urban consumption and overstretched waste management systems, is finding its way into Jaffna's waterways, contaminating marine ecosystems and putting the livelihoods of fishing families at risk.

From this crisis emerged 'Save a Life', a local organization with a mission to transform waste management systems and mindsets, focusing on environmental justice and reducing plastic pollution.

Rather than working around local government, Save a Life chose to work

directly with it. Their partnership with the Valikamam North Pradeshiya Sabha, one of Jaffna's local government bodies responsible for waste management, became the foundation for a model of institutional change that goes well beyond a single project. At the heart of this partnership was the development of a comprehensive Waste Management Strategic Plan for 2025–2030, a document grounded in extensive field consultations, technical evaluations, and a thorough waste audit examining household and business waste generation, disposal habits, and recycling participation across the Valikamam North Sea. The findings provided critical data on plastic waste to inform targeted interventions, and promote sustainable

"This document presents a roadmap for a holistic and sustainable waste management ecosystem tailored to our local needs."



Save A Life's
founder, Rakulan
Kandasamy

practices through policy implementation and public awareness.

"This document presents a roadmap for a holistic and sustainable waste management ecosystem tailored to our local needs," says University of Jaffna Professor Gajapathy who contributed to the plan's development with extensive field consultations and technical evaluations.

The initiative went beyond planning, placing accountability at the heart of action. A Solid Waste Management Monitoring Committee, comprising 31 dedicated members, including 12 women, was established. This committee, designed to promote gender-responsive governance, received targeted orientation and capacity-building, including a dedicated

workshop on action plan development. Its purpose was to monitor, enhance, and ensure sustainable waste management practices within the Valikamam North Pradesha Sabha, focusing on community involvement, accountability, and effective decision-making. The approach contributed to embedding environmental accountability within local governance systems.

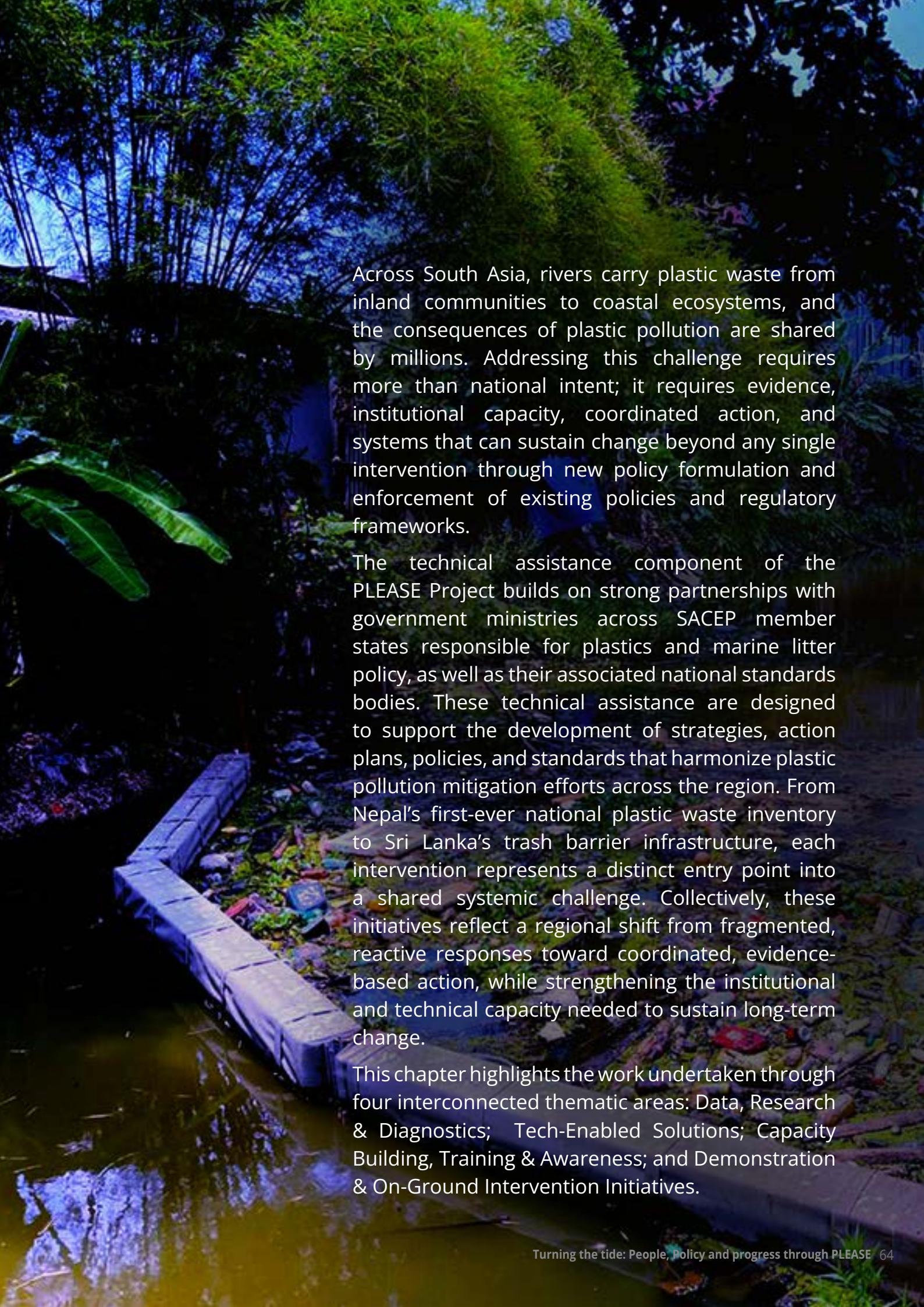
Alongside this governance infrastructure, a cutting-edge computerized waste management system was introduced and embedded into the regular functions of the Pradeshiya Sabha, enabling real-time tracking of waste collection activities across every division, providing citizens with unprecedented access to data about waste generation and collection in their communities. With designated officers, trained staff, budget provisions, and a formal service agreement in place, this digital system is poised to have long-term effects on improving waste collection efficiency, and reducing illegal dumping, especially near coastal and water-sensitive zones.

Together, these interventions represent lasting institutional change. "Save a Life's work in Jaffna intends to have its greatest impact by having a proper waste management system and motivating people to reduce their plastic usage", Rakulan says. By empowering institutions for sustainable change, the Plastic Zero Initiative is directly contributing to reducing plastic pollution in Jaffna, and stands as a localized implementation of the national Clean Sri Lanka framework.

Save a Life's collaboration with the local government body in Jaffna demonstrates how visionary partnerships can transform challenges into enduring opportunities for a cleaner, healthier future.

The Infrastructure of Change: Technical Assistance Across the Region



A photograph of a riverbank. In the foreground, a concrete barrier made of interlocking blocks runs along the edge of the water. Behind the barrier, there is a pile of plastic waste, including bottles and other debris. The background is filled with lush green trees and foliage. The water in the river is calm and reflects the surrounding greenery.

Across South Asia, rivers carry plastic waste from inland communities to coastal ecosystems, and the consequences of plastic pollution are shared by millions. Addressing this challenge requires more than national intent; it requires evidence, institutional capacity, coordinated action, and systems that can sustain change beyond any single intervention through new policy formulation and enforcement of existing policies and regulatory frameworks.

The technical assistance component of the PLEASE Project builds on strong partnerships with government ministries across SACEP member states responsible for plastics and marine litter policy, as well as their associated national standards bodies. These technical assistance are designed to support the development of strategies, action plans, policies, and standards that harmonize plastic pollution mitigation efforts across the region. From Nepal's first-ever national plastic waste inventory to Sri Lanka's trash barrier infrastructure, each intervention represents a distinct entry point into a shared systemic challenge. Collectively, these initiatives reflect a regional shift from fragmented, reactive responses toward coordinated, evidence-based action, while strengthening the institutional and technical capacity needed to sustain long-term change.

This chapter highlights the work undertaken through four interconnected thematic areas: Data, Research & Diagnostics; Tech-Enabled Solutions; Capacity Building, Training & Awareness; and Demonstration & On-Ground Intervention Initiatives.



Evidence for Action: Data, Research and Policy Inputs

Effective policy begins with reliable evidence. Across South Asia, one of the most significant barriers to tackling plastic pollution has been the absence of consistent, comparable data on plastic waste generation, composition, and flow. Under this sub-theme, PLEASE has supported plastics pollution hotspots mapping exercises, plastic waste inventories, and diagnostic studies that give governments and institutions the evidence base they need to design targeted, effective policy interventions. By filling critical data gaps at the national and subnational level, these activities have helped transform plastic waste management from a problem that is loosely understood into one that can be precisely measured, monitored, and addressed.



103 rivers flow across Sri Lanka, sustaining ecosystems, livelihoods, and communities. The Central Environmental Authority's (CEA) Rapid River Survey (2020) found 10,377 issue points across 103 rivers, of which over 3,200 of them were recorded as solid waste, mostly plastics.

Turning the Tide on Plastic Pollution: A Scalable River Basin Approach in Sri Lanka

Ministry of Environment, Central Environment Authority, Sri Lanka | April 2025–May 2026 | Multi-Tech Solutions

From the sacred peaks of Adams Peak to the vast Indian ocean that surrounds Sri Lanka, 103 rivers flow across the country, sustaining ecosystems, livelihoods, and communities. These same rivers can also become pathways where plastic pollution travels from land to sea. The Central Environmental Authority's (CEA) Rapid River Survey (2020) found 10,377 issue points across 103 rivers, of which over 3,200 of them were recorded as solid waste, mostly plastics.

The policy backdrop

In 2021, Sri Lanka launched the Surakimu Ganga National Environmental Programme (SGNEP), a national initiative to recover trapped plastic waste from canals, dams, and reservoirs. The programme signalled political

will to tackle riverine pollution, but clean-up operations without a diagnostic foundation risk becoming a cycle of removal without prevention.

- 11 Major rivers assessed
- 75% of all river issue points covered
- 32 Government Agencies engaged

* The selected 11 rivers account for approximately 85% of all solid waste dumping issues in Sri Lanka's river environment, making this a direct contribution to an active national agenda.

The approach

- Science-first assessment: Water, sediment, and biota sampled across all 11 basins. Four CEFA-certified laboratories of the Central Environmental Authority (CEA), Marine Environment Protection Authority (MEPA), National Aquatic Resources Research and Development Agency (NARA), and University of Sri Jayewardenepura trained on a unified sampling protocol and standardised



PLEASE project's technical assistant initiative set out to assess 11 major rivers, cover 75% of all river issue points

- laboratory analysis, building national capacity that will outlast this project.
- Plastic Intensity Index (PII): A new tool mapping sub-catchments by leakage risk, transport corridors, and retention zones, guiding planners on plastic entering and exiting hotspots.
- 11 five-year master plans: One plan per river basin (2026–2030), each with tiered priorities, governance structures, and financing built in., Coordination across 32 agencies: A formal coordination mechanism proposed to align all mandated government agencies into shared basin workplans, joint inspections, and public reporting, turning fragmented mandates into unified action.

Long-term outcomes

- Reduction of plastic leakage into rivers and ocean
- Institutionalization of data-driven environmental management
- Scalable model for national riverine plastic monitoring and planning



The 2025 National Waste Inventory Survey (NWIS) TA updates GHG emissions data and introduces the first nationwide, GIS-based waste infrastructure map to empower evidence-based local and national planning.

Mapping what matters: A nationwide waste inventory to anchor Bhutan's Zero Waste ambition

Ministry of Energy and Natural Resources, Department of Environment and Climate Change | December 2024 – September 2025 | In collaboration with UNDP Bhutan

The policy backdrop

Bhutan's Zero Waste by 2030 goal is embedded in its National Waste Management Strategy and the 13th Five-Year Plan's commitment to a circular economy. Alongside this, Bhutan's Nationally Determined Contributions (NDC 3.0) under the Paris Agreement require credible data from the waste sector to report on climate mitigation

commitments. The 2019 National Waste Inventory Survey (NWIS), the country's last comprehensive baseline, was increasingly outdated for both purposes.

This TA was designed to produce National Waste Inventory Survey (NWIS) 2025, update the GHG emissions picture from the waste sector, and create the first GIS-based spatial map of waste infrastructure nationwide, giving planners the tools to make evidence-based decisions at national and local scale. Critically, it was also an example of inter-agency coordination: the Ministry of Energy and Natural Resources brought UNDP Bhutan (funded through the Coca-Cola Foundation's regional plastics project) and SACEP PLEASE together, avoiding duplication and combining resources.

- An inter-governmental organisation (IGO)
- Established in 1982 by the governments of South Asia to promote and support protection, management and enhancement of the environment in the region
- Member countries are Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka
- SACEP Secretariat in Colombo, Sri Lanka
- SACEP has a convening power to bring these 8 countries, with Environment Ministers in the Governing Council
- SACEP is registered with the UN Secretariat as a multilateral organization in accordance with Article 102 of the charter of the United Nations



The approach

1. National Waste Inventory Survey 2025: A direct update to the 2019 NWIS, this nationwide survey will be instrumental in shaping Bhutan's approach to waste management, ensuring a cleaner and more sustainable environment for future generations. The NWIS will be soft-launched on 4 June 2026, and official launch will be on the International Day for the Preservation of the Ozone Layer on 16 September.
2. GHG emissions from the waste sector: Quantified current greenhouse gas emissions from solid waste and projected future scenarios feeding directly into Bhutan's NDC 3.0 reporting obligations under the Paris Agreement and enabling climate-waste policy integration.
3. GIS-based spatial mapping: First-ever nationwide GIS mapping of solid and plastic waste infrastructure giving

planners a spatial picture of where infrastructure exists, where gaps are, and where investment is needed. The results have been utilised by another project on waste management funded under JICA.

4. Waste Infrastructure Master Plan 2025: Combined the inventory and GIS analysis into a forward-looking national master plan, setting out infrastructure priorities and investment pathways to move Bhutan toward its 2030 zero waste goal in a spatially targeted and evidence-led way.

Long-term outcomes

In the long run, this technical assistance will support achieving:

1. Credible data foundation for Zero Waste Bhutan by 2030
2. Integrated waste-climate planning through NDC 3.0 alignment
3. Replicable inter-agency coordination model for future TAs



Nepal's annual national reports on hazardous and other waste had been inconsistent due to the absence of reliable national data.

Building the baseline: Nepal's first national plastic waste inventory — from data gap to policy foundation

Ministry of Forests and Environment, Nepal
| October 2024 – November 2025 | AVNI
Ventures and Resource Advancement Team
JV

The policy backdrop

Nepal is a party to the Basel Convention, which requires signatory countries to submit annual national reports on hazardous and other waste, including plastic waste. Despite this obligation, Nepal's reporting had been inconsistent due to the absence of reliable national data. At the same time, the Government was preparing to ban single-use plastics: a new Plastic Bag (Regulation and Control) Directive 2026 has since been issued,

replacing the 2011 directive and establishing comprehensive standards for production, import, storage, sale, and use of plastic bags.

The approach

1. Full plastic value chain inventory: Covered all seven plastic polymer types across the plastic value chain: production, import, utilisation, and end-of-life. This is not a sampling exercise — it is a comprehensive national accounting of plastic flows, establishing the first true baseline for Nepal.
2. Basel Convention methodology: The inventory used the Basel Convention Material Flow Analysis (MFA) Toolkit as its primary methodology building Nepal's technical capacity for international reporting and ensuring the data is directly usable for annual Convention submissions.



The Plastic Value Chain Inventory covers all seven plastic polymer types across the plastic value chain.

3. Hotspot identification: The inventory mapped key plastic pollution sources and hotspots, enabling targeted interventions rather than blanket measures. This spatial understanding is essential for enforcement agencies that need to prioritise where they act first.
4. Policy and legal framework analysis: Beyond the numbers, the TA assessed Nepal's institutional and regulatory landscape identifying gaps, overlaps, and the specific reforms needed to move toward a circular plastic economy. Recommendations are already being enacted in the Plastic Bag (Regulation and Control) Directive 2026.



7

plastic polymer types inventoried



1st

ever national plastic baseline for Nepal



Basel

Convention reporting methodology applied

Long-term outcomes

In the long run, this technical assistance will support achieving:

1. Consistent Basel Convention reporting underpinned by reliable national data
2. Evidence-led enforcement of the 2026 single-use plastic ban
3. Foundation for circular economy transition across all polymer types

Tech-Enabled Solutions: Digital and Smart Waste Management Systems

Given the right digital infrastructure is in place, technology has the power to make waste management systems smarter, more transparent, and more responsive, and also track the progress of regulatory enforcement. Under this sub-theme, PLEASE has supported the development and deployment of digital platforms, databases, and IT systems, CCTV installation that strengthen how waste is tracked, reported, and managed across the region. From computerized waste tracking systems embedded in local government operations to GIS mapping of waste facilities and digital data collection tools, and an integrated database and dashboard development, these interventions are building the technological backbone that modern, efficient waste management systems depend on, and ensuring that the data generated by communities and collectors is captured, used, and acted upon.



The Maldives is an archipelago of 1,200 islands. Managing waste across that geography, tracking what is generated, collected, and moved between islands requires data infrastructure that actually works at sea.

Building the Backbone: A Smart Waste Management System for the Maldives

Ministry of Environment & Tourism, Maldives | March 2024 – February 2026 | X.O Concepts Pvt Ltd & XDOTO Concepts Pte Ltd

The Maldives is an archipelago of 1,200 islands. Managing waste across that geography, tracking what is generated, collected, and moved between islands requires data infrastructure that actually works at sea.

The policy backdrop

The Magey Saafu Raajje National Waste and Resources Management Policy and Strategy 2024–2028 sets out a comprehensive framework for sustainable solid waste

management across the Maldives. Strategy 6 of that policy calls specifically for the establishment of a National Waste and Resource Management Database and Monitoring System — a digital backbone that makes the entire waste management system legible and trackable.

The Uthahi system, jointly commissioned by the Ministry of Tourism and Environment, was the vehicle for that strategy. But it needed upgraded hardware, a more capable database, and a citizen-facing application that people would actually use — including in Dhivehi. This TA delivered all three.

The approach

1. Hardware and server infrastructure: Two new servers and 10 GPS tracking units



The Magey Saafu Raajje National Waste and Resources Management Policy and Strategy 2024–2028 sets out a comprehensive framework for sustainable solid waste management across the Maldives.

for landing craft carrying waste between islands, providing the physical backbone for real-time monitoring of inter-island waste movement across the archipelago.

2. Database and application upgrade: A comprehensive review and upgrade of the Uthahi database and portal, improving performance and adding key functionality, including a Waste Collection Calendar for the Greater Malé Region and outer islands, directly addressing the visibility gap in collection scheduling.
3. Dhivehi language integration: The citizen application was upgraded to include a Dhivehi language option, a critical accessibility step that extends the system's reach beyond English-literate users and makes waste tracking and reporting genuinely inclusive.
4. Training of island councils: Training delivered to island councils and service providers on using the upgraded system, ensuring that the technology investment is matched by the human capacity to use and maintain it at the local level.



2

servers supplied
for national data
infrastructure



10

GPS units for waste
transport tracking at
sea



2

ministries served
(Tourism &
Environment)

Long-term outcomes

In the long run, this technical assistance will support achieving:

1. Fully operational national waste tracking system across island communities
2. Evidence base for waste management investment and policy decisions
3. Citizen engagement through accessible, multilingual digital tools



Through the National Plastic Waste Management Plan 2025–2050, Pakistan TA drives policy development, institutional strengthening, and behavioral change for long-term transformation.

A Plan for Pakistan: Building the Foundation for National Plastic Waste Management and IT based monitoring and reporting mechanism for Pakistan

Ministry of Climate Change and Environmental Coordination | October 2023 – October 2025 | Project Procurement International & Techlogix Pakistan JV

The policy backdrop

Pakistan's plastic waste governance had long been characterised by a patchwork of provincial regulations with no common national framework. The result showed data gaps, inconsistent enforcement, and no shared picture of where plastic leakage was concentrated. The country needed both

diagnostics and a direction.

This TA in Pakistan through the development of the National Plastic Waste Management Plan 2025 -2050 contributed to policy development, institutional strengthening and behavioural change, laying the foundation for possible long-term transformation. Additionally, with the IT database developed, a platform to centralize and visualize data on plastic production, import and export, waste generation and characteristics, recycling, leakage, and disposal is expected to enable continuous tracking of evolving trends, strengthens evidence-based decision-making, and measures progress against national and regional policies, strategies, and action plans to achieve plastic reduction goals, including the National Plastic Waste Management Plan 2025 -2050 drafted by this TA.



The approach

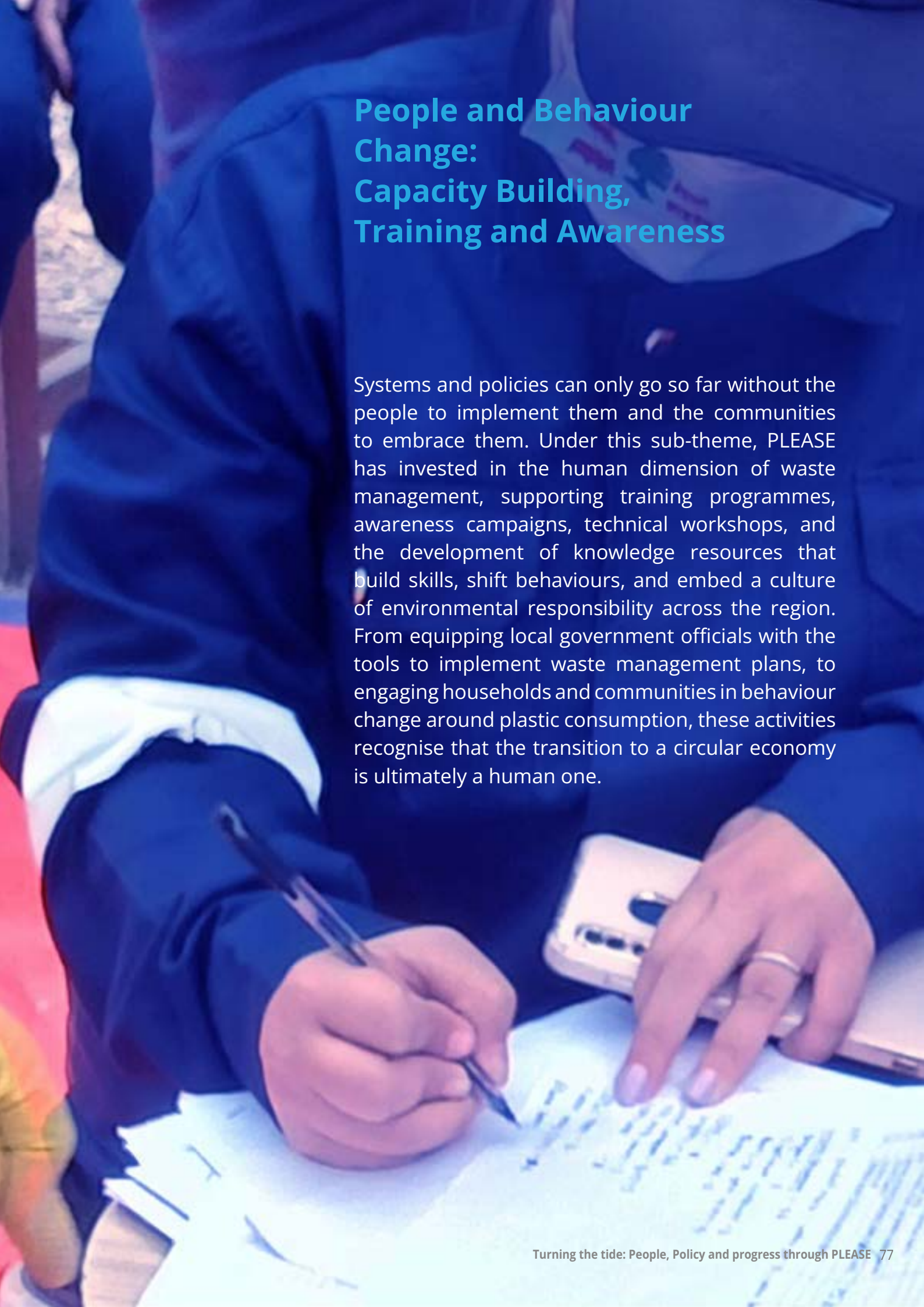
1. Plastic pollution hotspot mapping: Pakistan's first structured, data-driven mapping of where plastic leakage is most concentrated, supporting governance move from assumption to evidence.
2. National IT database and dashboard: A centralised IT system to track plastic production, import/export, waste generation, recycling, leakage, and disposal across Pakistan, enabling continuous monitoring of trends and measuring progress against national and regional targets.
3. National Plastic Waste Management Plan 2025–2050: A long-horizon national plan that replaces fragmented provincial approaches with a coherent national direction, integrating EPR, circular economy principles, and coordinated stakeholder engagement into a single framework.

4. Policy literacy and awareness: Public communication campaigns and stakeholder training built understanding of circular economy tools and waste policy instruments, including EPR, creating the social and institutional groundwork that policy enforcement depends on.

Long-term outcomes

In the long run, this technical assistance will support achieving:

1. Coherent national plastic governance replacing fragmented provincial regulation
2. Hotspot-targeted interventions driven by real-time national data
3. EPR and circular economy frameworks embedded in national policy

A close-up photograph of a person wearing a blue jacket, focused on writing on a white notepad with a black pen. Their left hand rests on the notepad near a white smartphone. The background is slightly blurred, showing other people in similar blue jackets, suggesting a group activity or training session. The overall image has a blue tint.

People and Behaviour Change: Capacity Building, Training and Awareness

Systems and policies can only go so far without the people to implement them and the communities to embrace them. Under this sub-theme, PLEASE has invested in the human dimension of waste management, supporting training programmes, awareness campaigns, technical workshops, and the development of knowledge resources that build skills, shift behaviours, and embed a culture of environmental responsibility across the region. From equipping local government officials with the tools to implement waste management plans, to engaging households and communities in behaviour change around plastic consumption, these activities recognise that the transition to a circular economy is ultimately a human one.



The Bangladesh TA initiative set out to generate the analytical baseline and the train human capacity that effective phase-out enforcement demands.

Bangladesh's Fight Against Plastic: Comprehensive Training Program on Plastic Waste Reduction and Single Use Plastic (SUP) Alternatives

Ministry of Environment, Forest and Climate Change, Department of Environment, Bangladesh | March 2025 – April 2026 | e.Gen Consultants Ltd

The policy backdrop

Bangladesh was one of the first countries in the region to ban polyethylene shopping bags in 2002. Then in August 2024, Bangladesh's Ministry of Environment, Forest and Climate Change formalised the phase-out of 17 SUP items, taking a significant policy leap to control the challenges posed by plastic waste management in the country. But legislating a phase-out and enforcing it are two different challenges. Enforcement agencies lacked structured data on the SUP value chain, and without understanding who produces, trades, and disposes of these items and where leakage occurs, the policy risked remaining on paper.

Designed to close that gap between legislation and implementation, this PLEASE TA initiative set out to generate the analytical baseline and the train human capacity that effective phase-out enforcement demands.

The approach

- 1. Integrated analytical baseline:** A four-part analysis - Rapid Market Assessment, Value Chain Analysis, Material Flow Analysis of Dhaka South City Corporation, and Life Cycle & Techno-Economic Assessment - built a comprehensive picture of how SUPs move through the economy, where they leak, and what different management options cost and impact.
- 2. Value Chain Analysis (VCA):** Mapped interactions between producers, traders, retailers, and waste recovery actors, including the incentives they respond to and the barriers they face. This revealed where intervention would be most effective and helped build consensus around EPR as a critical next step.



Mapped interactions between producers, traders, retailers, and waste recovery actors, including the incentives they respond to and the barriers they face.

3. Structured, scalable capacity building:

Three training tiers, Basic awareness, Advanced technical, and Training of Trainers, were delivered to 283 government officials across four cities. The Training of Trainers (TOT) layer is designed to multiply impact beyond this project as trained officials train others.

4. Cross-institutional coordination: Bringing together enforcement agencies, value chain actors, and policy stakeholders in one platform created shared understanding and alignment, reducing the fragmentation that undermines phase-out enforcement in practice.

Long-term outcomes

In the long run, this technical assistance will support achieving:

1. Evidence-based enforcement of the SUP phase-out across Bangladesh
2. Sustained capacity through a multiplying network of trained government officials
3. Policy framework for EPR and infrastructure investment in plastic waste



283

government
officials
trained



4

cities covered
(Dhaka, Rangpur,
Sylhet, Chattogram)



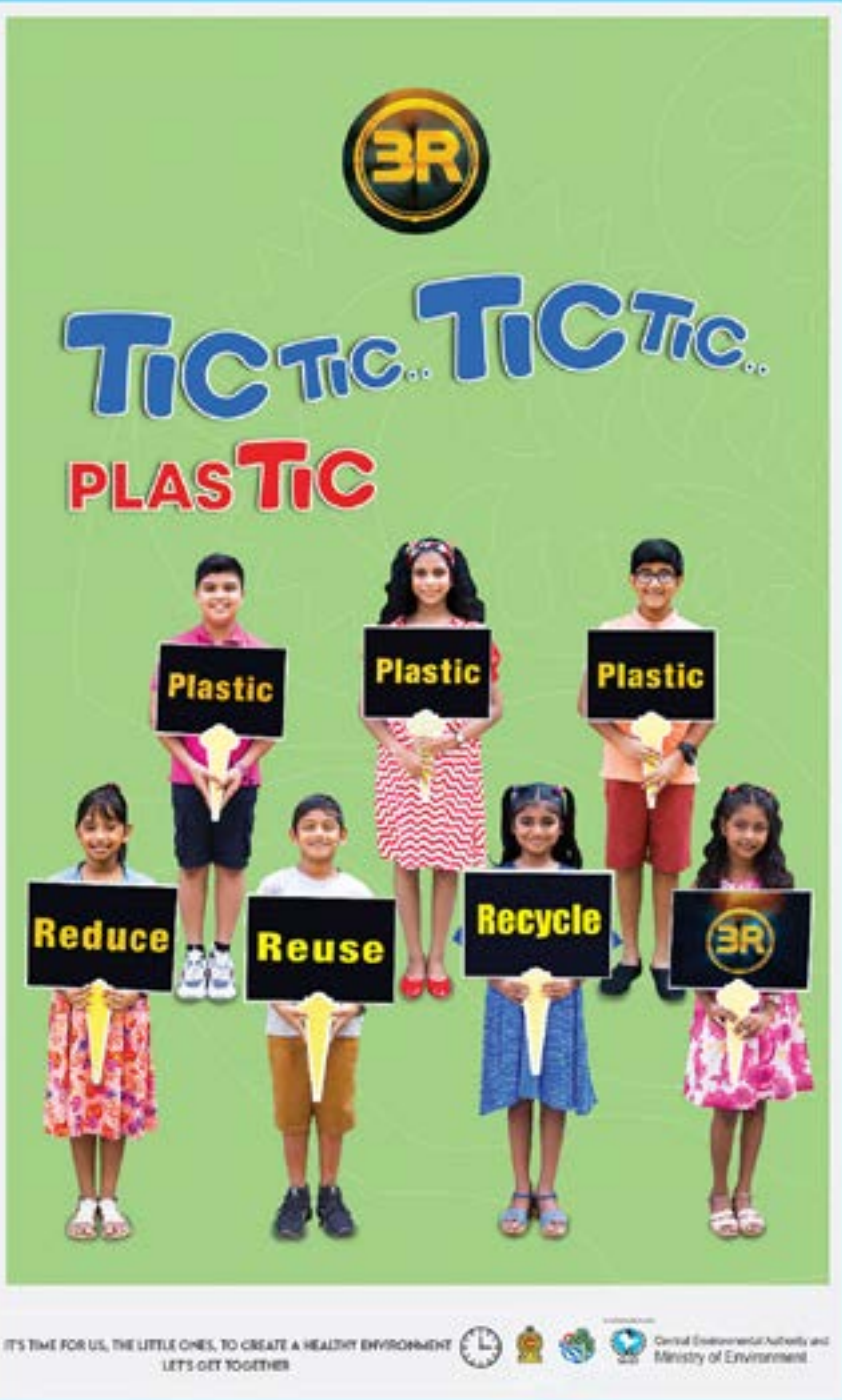
17

SUP items
targeted for
phase-out



3

training tiers:
Basic, Advanced
& TOT



Sri Lanka's first TA supported the operational delivery of the Communication Strategy for the National Action Plan on Plastic Waste Management

Nudging the nation: A mass communication campaign to shift how Sri Lanka thinks about plastic waste

Ministry of Environment, Sri Lanka | May 2023 – April 2024 | Communi Network

The policy backdrop

Sri Lanka's National Action Plan on Plastic Waste Management 2021–2030 sets out 16

goals spanning regulation, infrastructure, and behaviour change. Two of these goals specifically required a mass communication strategy: enhancing knowledge and competency in plastic waste management across stakeholder groups by 2030 (Goal 12) and enabling local authorities to design and implement voluntary community participation schemes for 3R activities (Goal 16).

This TA supported the operational delivery of the Communication Strategy for the National Action Plan which identified the channels and messages needed to reach the public, by developing the content, producing the materials, and pushing them through every available channel simultaneously.

The approach

1. Multi-channel content deployment: Communication tools developed and disseminated simultaneously across radio, television, newspapers, social media, indoor and outdoor LED panels, and billboards, ensuring the campaign reached urban and rural audiences, and all age groups, through the channels they actually use.
2. Five campaign videos: Five dedicated videos produced for national distribution, designed to communicate the 3Rs (Reduce, Reuse, Recycle) in accessible, culturally relevant formats.
3. Behaviour nudging toward source segregation: The campaign's core focus was not just awareness but behaviour change, specifically nudging citizens toward plastic consumption reduction and source segregation at household level, which is the foundation of any effective material recovery system.
4. Supporting local authority action: Content was designed to support Goal 16, equipping local authorities with material to encourage voluntary community participation in 3R activities. This connects national messaging to local implementation, creating a coherent national-to-local communication chain.



LET US CHANGE
WITHOUT
CHANGING OUR
ENVIRONMENT



LET'S SHIFT TO ALTERNATIVES WITHOUT PLASTIC.....



Central Environmental Authority and
Ministry of Environment

Communication
tools
developed and
disseminated
simultaneously
ensuring the
campaign
reached urban
and rural
audiences



5

videos
produced
for national
distribution



6+

channels:
TV, radio, print,
social, LED panels,
billboards



2

National
Action Plan goals
directly served
(12 & 16)

Long-term outcomes

In the long run, this technical assistance will support achieving:

1. Sustained public behaviour change toward 3R practices at household level

2. Reusable communication assets for ongoing national awareness efforts
3. Strengthened local authority capacity to run community participation schemes



Impact on the Ground: Demonstration and On-the-Ground Intervention Initiatives

Ideas must ultimately be tested in the real world. Under this sub-theme, PLEASE has supported direct, on-the-ground interventions that put circular economy solutions into practice, from waste collection infrastructure and cleanup initiatives to the piloting of innovative approaches to plastic recovery and reuse. These demonstration projects serve a dual purpose: delivering immediate, tangible environmental impact in the communities where they are implemented, while also generating the practical evidence and lessons that can inform replication and scale across the wider region. In a landscape where policy and practice do not always connect, these interventions bridge the gap.



The Bhutan TA was the vehicle for turning the Thimphu-Paro corridor become a national model for sustainable waste management vision into operational reality, combining smart technology, performance-based contracting, and community engagement.

Clean by design: Smart infrastructure and citizen action along the Thimphu-Paro corridor

Ministry of Energy & Natural Resources, Department of Environment and Climate Change,, Bhutan | February – December 2025 | Bhutan Ecological Society

The Thimphu-Paro corridor is Bhutan's economic and cultural heartland. In 2025, the Honourable Prime Minister of Bhutan called for it to become a **national model for sustainable waste management**. This TA was the vehicle for turning that vision into operational reality, combining smart technology, performance-based contracting, and community engagement.

The policy backdrop

The Clean Thimphu City Action Plan and Clean Paro Dzongkhag Action Plan, Bhutan's National Waste Management Strategy, the 13th Five-Year Plan's circular economy commitments, and the Zero Waste by 2030 targets all aim for waste free Bhutan. Both the plans identified the same core

challenges: inadequate monitoring of illegal littering and dumping, unreliable collection performance, and limited citizen participation in waste reduction.

This TA translated those action plans into concrete infrastructure and systems on the ground — and introduced a new model of outcome-based contracting that shifts how frontline waste services are managed and monitored.

The approach

1. Smart surveillance and monitoring: 95 CCTV cameras installed across Thimphu and Paro with two dedicated surveillance stations, enabling real-time monitoring of illegal dumping and littering. Thimphu Thromde is in the talks to add 21 more cameras under the Government of India (GoI)'s grant assistance for the High Impact Community Development Project.
2. AI-enabled smart bins: 32 smart bins equipped with 4G ultrasonic sensors deployed in Thimphu, providing real-time fill-level data to optimize collection routes and reduce unnecessary trips. A mini tipper for organic waste collection was also introduced.



Thimphu Thromde outsources cleaning to keep core city spotless

Tenzin Lhakpa

In a move to improve urban hygiene and livability, Thimphu Thromde has outsourced its street sweeping and drain cleaning services to Green Urban Service (GUS), a local waste-management company. The partnership is aimed at making the Green Thimphu City Initiative (GTICI), which aims to improve the city's sanitation infrastructure through a combination of technology, public engagement, and strategic urban planning.

GUS received a five-month contract through an open bidding process to manage sweeping and drain maintenance operations in Thimphu's Core City area, also known as the Norzin Zone. The company, already serving as a waste management sponsor in South Thimphu, will now oversee cleanliness

in one of the busiest sections of the capital.

Thimphu Thromde's chief environment officer, Sonam Wangyel, said that privatizing sweeping and drain cleaning services to GUS is "a growing confidence in public-private partnerships and community-based service delivery." It exemplifies the different performance-driven and accountable urban management.

Outsourcing, he said, brings multiple advantages. "It is cost-efficient, improves service quality, and allows Thromde to focus on its core functions of planning, regulation, and monitoring, rather than day-to-day operations."

He added that public-private partnerships ensure high service standards and timely delivery, while reducing the administrative burden on the municipal office.

"Outsourcing this service job, fosters innovation and technology adoption, and reduces the need for human resource management," he said. "It also makes it easier to enforce penalties or offer incentives based on performance, compared to managing it in-house."

The Norzin Zone, which includes Norzin-De, Norzin-Wang, and Yangcholing, generates high volumes of waste due to numerous commercial and public activities. GUS's new task will include sweeping all these roads in the area.

The company will sweep a total of 18,330 metres of streets, including daily sweeping of 2,800 metres of primary roads and 36,000 metres of footpaths. Secondary roads (2,820 metres) will be swept

four times a week, while tertiary roads (11,800 metres) and narrow roads (8,000 metres) will be cleaned three times weekly. Public squares such as Chok-Tseer Square and Chagthangthang will be cleaned as needed, especially during events.

GUS is also responsible for 140-150 metres of drainage infrastructure. Primary drains (1,000 metres) will be cleaned three weekly, secondary drains (1,000 metres) twice weekly, and tertiary drains (5,474 metres) in residential areas at least twice a month. The cleaning process includes debris removal, flushing, jetting, and inspection for street-side drainage.

In addition, street and stream cleaning, covering 2,000 metres, will be conducted weekly, with increased frequency during the monsoon season. This includes the re-

moval of plastic waste, organic debris, and accumulated trash near bridges and culverts.

The chief executive officer of GUS, S.K. Bhatia, said that with the firm's extensive experience in waste management, it is confident in its ability to better manage and maintain a cleaner city. "With careful planning, including calculated schedules and timelines for street sweeping and drain cleaning, the city will remain clean at all times."

He said that with strategic regular cleaning and monitoring they hoped that the upcoming monsoon season would see fewer issues of water overflow on roads.

The GTICI project is supported and funded through the South Asia Cooperative Environment Programme under the PLEAS project with co-funding from the World Bank.

 95

CCTV cameras
installed (29 Paro, 66
Thimphu)

 32

AI-enabled smart bins
deployed in Thimphu

 32

frontline workers
trained on smart
monitoring



4,047m²
public spaces beautified
and greened

3. The Norzin Model: A performance-based contracting framework for street sweeping and drain cleaning, shifting from traditional input-based supervision to outcome-focused monitoring. This changes the incentive structure for frontline waste service delivery in a replicable way.
4. Community engagement and upcycling: The Eco Ambassador Movement built citizen awareness and participation. Plastic upcycling training was delivered specifically for women, creating livelihood opportunities alongside environmental impact. 3R signage maintained at 19 strategic locations.

Long-term outcomes

In the long run, this technical assistance will support achieving:

1. Replicable smart waste management model for Bhutan's urban centres
2. Sustained behaviour change through the Eco Ambassador Movement
3. National scale-up of performance-based waste service contracting
4. Optimizing CCTV cameras for waste littering surveillance and to inspire behavioural change



Colombo's canal network is both its drainage system and one of its biggest sources of plastic leakage into the ocean.

Closing the loop in Colombo: Intercepting plastic at the waterway and building the workforce to manage it

Ministry of Environment, Sri Lanka |
September 2025 – April 2026 | Negombo
Recycling Club

The policy backdrop

Colombo's canal network is both its drainage system and one of its biggest sources of plastic leakage into the ocean. Once plastic enters a canal, it moves fast — through wetlands, into the Kelani River basin, and out to the Indian Ocean. The Clean Sri Lanka (CSL) initiative was launched by the Honourable President of Sri Lanka as a national programme to foster a cleaner

physical environment alongside a broader moral commitment to ethical principles. Its Environmental Pillar addresses waste management, circularity, and waterway cleanliness as interconnected priorities.

This TA directly supported the Environmental Pillar of CSL, while simultaneously advancing four goals of the National Action Plan on Plastic Waste Management 2021–2030: Goal 7 (collection and segregation systems), Goal 8 (recycling and recovery rates), Goal 12 (knowledge and competency), and Goal 15 (occupational health and safety for waste workers). The NVQ training component — delivering nationally recognised qualifications to frontline waste workers — is particularly significant: it professionalises a workforce that is essential to plastic recovery but has historically been invisible to formal training systems.



Together with the Clean Sri Lanka Secretariat, this TA initiatives installed infrastructure to manage plastic waste leaking into waterways while also enriching the lives of the Waste Workers in the country's capital.

The approach

1. 22 canal trash barriers: Installed across Colombo's canal network to physically intercept plastic waste before it enters the Kelani River basin and sensitive wetland systems. Intercepted waste is regularly collected and transported to the Kerawalapitiya Waste Transfer Centre, closing the pathway to the Indian Ocean.
2. NVQ Level 3 (Material Recovery Facility Operations): 52 waste workers trained and certified under the nationally recognised NVQ Level 3 qualification (Material Recovery Facility Operations Assistant), building advanced operational competency in recycling processes, supervisory risk assessment, and compliance monitoring.
3. NVQ Level 2 (Municipal Solid Waste Operations): 48 workers trained and certified under NVQ Level 2 (Municipal Solid Waste Operations Assistant), covering safe handling, PPE use, segregation, and basic recycling practices.
4. Multi-stakeholder partnership model: Delivered in collaboration with the Clean Sri Lanka Secretariat, SLLDC, Colombo Municipal Council, WPWMA, MAS Foundation, and Parley, demonstrating how public-private partnerships can combine to keep waterways plastic-free while empowering the workers who make it possible.



22

trash barriers
installed in
Colombo canals



100

waste workers
trained and
NVQ-certified



4

National Action Plan
goals served
(7, 8, 12, 15)



52+48

workers certified at
NVQ Level 3 and
Level 2

This TA worked at both ends of the plastic pollution chain: physically intercepting waste already in the system, and building the skilled workforce that keeps material recovery functioning. The NVQ certification formally recognises waste work as a profession, creates a career pathway, and builds the institutional knowledge that collection and recycling systems depend on. Combined with the multi-agency partnership model, this initiative shows what coordinated urban plastic management looks like in practice.

Long-term outcomes

In the long run, this technical assistance will support achieving:

1. Sustained reduction of plastic entering Colombo's waterways and the Indian Ocean
2. Professionalised waste workforce with nationally recognised qualifications
3. Replicable public-private partnership model for urban plastic interception

Youth and innovative solutions for plastics



The PLEASE HACK brought together hundreds of young people from eight South Asian countries

Hundreds of young people from eight South Asian countries came together in early 2025 to develop their innovative ideas and create effective solutions to plastic pollution.

The PLEASE Hack hackathon was designed to inspire and challenge people aged 18 to 30 from the eight countries of South Asia – Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka – to develop innovative solutions that tackle

the critical issue of plastic pollution in their countries.

South Asian young innovators from diverse backgrounds in remote villages, towns and megacities competed in the event and proposed a wide range of solutions to address plastic pollution, a major environmental issue threatening the region.



92 teams were selected to participate in a two-week Virtual Hackathon in March 2025

Competitors were invited to propose innovations in three categories:

1. An innovative solution that could be used by citizens at the household or community level as current users of plastics in their daily lives.



2. An innovative solution that could be adopted by micro, small, and medium-sized enterprises (MSME) that currently use plastics in production or distribution processes.
3. A knowledge-sharing system through a website or mobile App (or both) that enhanced consumer-level awareness of plastic use in daily life and helped consumers be more conscious of their plastic footprint, inspiring individual action.

The hackathon's call for concept notes was issued in January 2025 through the PLEASE Project website and social media channels and by the deadline of 13 February, 2025, nearly 400 people had applied.

The concept notes were reviewed by a technical team and 92 teams were selected to participate in a two-week Virtual Hackathon in March 2025. The virtual event was a digital creative and learning space, led by international and regional mentors and guest speakers of diverse expertise, including the environment, innovative ideation and presentation skills.

During the two weeks, participants worked to improve their proposals. Regional judges from Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka selected the 23 finalists who then competed at the Regional Hackathon Finale in Colombo, Sri Lanka, on April 6, 2025.

Three regional and eight national winners were selected.





Regional judges selected the 23 finalists who then competed at the Regional Hackathon Finale in Colombo, Sri Lanka,

The Sri Lanka team 'Myco Box by White Root' was unanimously selected as the overall regional winner. Team 'Green Alchemy' from India won second place and third place was awarded to Team 'Eco Pet' from Bhutan.

Myco Box by Sri Lanka's White Root team was recognised for their outstanding

innovation, securing both the Regional Winner title and the National Winner award for Sri Lanka. Focusing on Sri Lanka's fishing industry, Myco Box's innovation addresses the environmental impact of styrofoam waste. In Sri Lanka, fishermen commonly use styrofoam boxes to store fish. These boxes break easily, and when abandoned in the natural environment, they can break down and create microplastics harmful to marine life. Myco Box offers an eco-friendly alternative: a fully biodegradable fish storage box. Its outer layer uses mycelium, a root-like structure found in fungus, while the inner layer combines aluminum foil and cardboard for durability and reuse. Myco Box's biodegradable fish storage box is affordable (USD6–USD8 compared to USD10–USD20 for styrofoam) and customisable. The team created fish storage boxes as part of their innovation alongside other sustainable packaging solutions, which will lead to them





Their innovation supports several Sustainable Development Goals (SDGs), promotes zero waste production, and has received positive feedback from potential users.

Team Green Alchemy from India presented a solution to tackle microplastic pollution using biodegradable enzyme pellets. Highlighting South Asia's acute microplastic crisis, Green Alchemy found that environmental degradation increased economic vulnerability. The team's winning innovations were enzyme pellets, which degrade PET plastics into simple monomers with 90-95% efficiency within 40-72 hours. The pellets can be used in wastewater plants, industrial zones, and coastal areas. Currently at Technological Readiness Level (TRL) 6, Green Alchemy aims to reach TRL 10 in two years. Their financial model includes initial reliance on grants and later revenue from product sales and consulting. They plan to scale domestically across India, then regionally to Pakistan, Bangladesh, and Sri Lanka. Green Alchemy intends to collaborate with governments, industries, and communities, aligning with SDGs 6, 13, and 14. They seek USD95,000 for scaling, emphasizing energy savings, quicker degradation, and reuse benefits to attract clients like Unilever and Coca-Cola.



establishing their first pilot plant. The team needs USD 16,000 to establish the production plant and is actively seeking partnerships with fisheries, exporters, farmers, and coastal communities.

The Bhutanese team, EcoPet, presented an innovative solution to tackle plastic waste through a gamified App called EcoPet. Motivated by childhood experiences of witnessing waste pollution, the team emphasized the need for new ways to engage youth in plastic waste management.



The Bhutanese team, EcoPet, with an innovative solution to tackle plastic waste through a gamified App emerged second runner up in the regional competition



Team Green Alchemy from India won second place





The Sri Lanka team 'Myco Box by White Root' was unanimously selected as the overall regional winner

EcoPet encourages students aged 10 to 15 to take care of digital pets by recycling plastics, verified through QR codes, and redeeming eco-points for real-world or in-game rewards. The App uses gamification to boost engagement, retention, and behavior change among teenagers and the overall population. Revenue streams of EcoPet innovation include a portion from recycled material sales, green product advertisements, and partnerships. EcoPet aligns with Bhutan's Zero Waste Goals, together with SDGs to promote social inclusion, while offering leadership roles for marginalized groups. EcoPet draws inspiration from renowned Apps like Duolingo and Tamagotchi. The innovation is still in the design phase. The development phase of the EcoPet App is a three-month timeframe, followed by partnerships and scaling efforts. Financial support, partnerships, and policy engagement will expedite the development and application of the innovation within Bhutan and the South Asian region.

The regional winners attended and addressed the high-level Regional Roundtable Meeting Plastic Free Rivers and Seas: A Vision for

South Asia where their innovations were shared with policymakers, researchers and development practitioners.

South Asia Co-operative Environment Programme Director General Norbu Wangchuk opened the hackathon finals in Colombo.

"The crisis unfolds before our eyes as South Asia faces its future through our current actions. We should use our energy with creativity and courage to fight against climate change and plastic pollution. Young generations are our hope; let's support them in driving positive actions. The world is watching; it's time for us to act together," Mr Wangchuk said.

Plastic Free Rivers and Seas for South Asia Project (PLEASE Project) South Asia Co-operative Environment Programme Project Director Anjalie Devaraja said: "True success lies not in winning, but in coming together with integrity and sharing ideas. Let's not forget to empower young generations to drive innovative solutions for a cleaner, more inclusive future.

A Region Speaks With One Voice:

SACEP Regional Roundtable on Plastic Pollution



The event brought together South Asian leaders for meaningful discussion on controlling plastic pollution within the region

Colombo, Sri Lanka, April 2025

When more than 200 leaders from across South Asia gathered in Colombo in April 2025, the room carried the weight of a region that had reached a turning point. Government ministers, environmental agencies, development partners, businesses, academics, and civil society representatives had come together not simply to discuss plastic pollution, but to agree on what to do about it.

The gathering was the culmination of a series of national roundtable discussions convened across the region throughout 2024, spanning Colombo, Kathmandu, Islamabad, Malé, Dhaka, and Thimphu. Leaders representing governments, environmental groups, development partners, businesses, academia and civil society from across South Asia gathered to discuss a unified approach crossing national borders to achieve tangible environmental benefits for the region.

PLASTIC FREE RIVERS & SEAS: A VISION FOR SOUTH ASIA

REGIONAL ROMANTIC DISCUSSION



Participants from the inauguration session

The level of engagement and contributions from participants signaled a strong willingness to work together and implement meaningful strategies for a plastic-free future for the region's waterways and marine ecosystems.

As the intergovernmental body mandated to promote regional cooperation on environmental issues across South Asia, the South Asia Cooperative Environment Programme (SACEP) occupies a unique position. It is trusted by governments, respected by development partners, and capable of convening the kind of high-level dialogue that turns national commitments into regional action. The PLEASE project has been the vehicle through which that convening power has been directed at one of the region's most pressing environmental crises.

"Plastic pollution threatens our rivers, our seas, and our livelihoods. This is not just a discussion but a call to action to embed circularity and sustainability into our economies," said SACEP Director General Norbu Wangchuk, setting the tone for two days of substantive engagement.

The urgency in the room was matched by the breadth of representation. The World Bank Group's Director of Regional Integration and Engagement for South Asia, Cecile Fruman, captured the scale of what is required: "No single country can fix this problem. We need all hands on deck with a regional approach



Director General of SACEP welcomed the participants



The event saw the participation from the private sector, PLEASE network and experts from plastic waste management sector



South Asian leaders call for coordinated regional action



Thematic panel 01: Policy and regulatory challenges



PLEASE grantees exhibited their innovations developed through the project

which brings together advocacy, public education, corporate responsibility, and policy making.”

The two-day agenda moved between panel discussions on policy gaps and regional coordination, and focused workshops offering technical deep dives across the plastic value chain. Grantees of the PLEASE project shared practical, data-driven solutions from the ground, and winners of the Youth Hackathon demonstrated that the next generation of environmental innovators is already at work.

Several clear calls to action emerged. Participants stressed the need for stronger regulatory frameworks and enforcement mechanisms to convert policy commitments, including Extended Producer Responsibility into practice. They called for harmonized regional standards and coordinated approaches to transboundary challenges like marine plastic litter. They emphasized that informal waste workers and community entrepreneurs must be treated not as beneficiaries of environmental solutions, but



Thematic panel 02:
Seas of Plastic



Sri Lankan researcher Dr. Gayathri Lokuge reported a rising accumulation of lost fishing gear on the country's coasts.



Mini workshop 01:
Alternatives for SUPs
in South Asia



Six mini-workshops provided a space to share solutions for plastic pollution and circularity.

as architects of them. And they underlined that sustainable financing, through plastic credits, blended finance, and public-private partnerships remains the critical lever for scaling impact without overburdening public budgets.

Above all, what the Colombo roundtable demonstrated is that the political will exists. Across ministries, sectors, and national borders, a regional consensus has formed and SACEP, through the PLEASE project, has been instrumental in building it. The

conversations that began in national capitals across South Asia in 2024 have converged into something more powerful: a shared regional commitment to tackling plastic pollution with urgency, innovation, and equity at its core.

What is needed now is follow-through. The leaders who gathered in Colombo left not with talking points, but with policy models, pilot results, and new partnerships. The region has spoken. The work continues.

South Asia's Circular Innovators Unite in Colombo to Reimagine the Future of Waste



Grantees received feedback after their presentations from a panel of evaluators made up of private sector leaders, investors, and entrepreneurs

South Asia is one of the most plastic contaminated regions in the world. Rapid urban development, rising consumer consumption rates, and inadequate waste management systems continue to fuel a growing plastic pollution crisis. Despite these challenges, the region has witnessed the emergence of promising innovations and good practices to tackle plastic pollution ranging from grassroots initiatives to scalable recycling and reuse models.

However, many innovators working to reduce, reuse, and recycle plastic face significant barriers in scaling their impact, particularly due to limited access to sustained funding. Strengthening innovative businesses, attracting long-term financial access, and



The event was inaugurated by the Hon Minister of Environment Sri Lanka, Dr Dhammika Patabendi

developing public-private partnerships are essential steps toward building a resilient circular economy in the region.

As these grants supported initiatives approach completion, securing investments to scale up their innovations beyond the project is key to sustaining momentum and catalyzing long-term changes. In pursuit of this goal, the Plastic Free Rivers and Seas for South Asia (PLEASE) project organized a regional symposium in Colombo on the 12-13th of November, 2025 providing a dedicated platform for innovators to access tailored business development support and have an opportunity to present their innovations to potential investors and development funders for scaling up.



PLEASE grantees and Hackathon winners had the opportunity to present their innovations and business models to an audience of private sector, development and funding partners

The symposium held at King's Court at Cinnamon Lakeside was ceremoniously declared open with the presence of the Hon. Minister of Environment, Dr. Dhammika Patabendi, SACEP director General Mr Norbu Wangchuk, The World Bank Group's Country Director for Sri Lanka and Maldives Mr Gevorg Sargsyan, UNOPS Head of Support Services Mr Maki Rankoe among other dignitaries. The two day event brought together 28 PLEASE project grantees in Bangladesh, Bhutan, Maldives, Nepal, Pakistan, and Sri Lanka, as well as 18 PLEASE hackathon finalists in Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.

In addition to the PLEASE innovator network,

the symposium saw the participation of key private sector investors in the Circular Innovations space in South Asia, representing organizations from Intellectap Advisory services in India, Circulate Capital, Indorama Ventures, IDLC Finance Bangladesh, Unilever Bangladesh and SAARC development fund to more local giants including John Keells Holdings and MAS Foundation for Change. With a rotating panel of evaluators made up from these investors, the PLEASE innovator network were given the opportunity to present their business cases focused on plastic circularity benefitting south Asian communities in return for business development recommendations and networking opportunities.



Partners from the circular economy sector shared their expertise on scaling up

What we learned along the way

The PLEASE Project collected insights into the success of the Project's implementation, and insights about areas for improvement. Some of the actions identified that will contribute to an overall sustainable model for Grants include:

1. Clear regulations, standardization of quality, and a stable environment for market exchange is critical to attracting investment and promoting long term development.
2. Stronger liaison between grant teams and local government agencies will create a smoother transition and continuation of activities uninterrupted.
3. Expanding market reach can occur through establishing stronger supply chain networks, increased manufacturing capabilities, formalizing sales and distribution channels via private sector partnerships, regional trade shows/ exhibitions or through digital platforms.
4. Empowering local teams to effectively manage infrastructure, and scale solutions through targeted support in developing technical capability (e.g. training in digital tools, data systems, hardware maintenance, and equipment procurement).

Grantees also provided feedback to guide improvements of future programs:

1. Need for flexibility and rapid pivots:

Grantees required support from the grant management team on quick-response planning and flexible budgeting to accommodate unforeseen circumstances,

such as political or contextual shifts.

2. Clearer communication of reporting requirements:

Grantees were able to submit final narrative reports on time but requested more streamlined guidance on monitoring and reporting templates and suggested iterations around data-capture formats.

3. Documentation and reporting requirements:

Implementing teams found that time and resources were sometimes diverted from on-the-ground execution due to the administrative burden of documentation and reporting requirements, which could be streamlined.

4. Flexible and phased implementation plan:

Tight project timelines, shortened implementation periods, and delays due to a myriad of reasons or approval processes left little room for adaptive planning. Flexible timelines, phased implementation models, or pre-assessment of regulatory bottlenecks could mean smoother execution and better alignment with on-the-ground realities.

Key learnings across the thematic areas are outlined as follows and can be used to guide implementation of future initiatives.

Stakeholder engagement & partnerships

- Early and continuous engagement with local authorities, community groups and donors were essential to tailor solutions to the local context and secure buy-in wherever required.
- Deep government involvement from the design stage supported the teams to

- quicken approval processes and reduce administrative delays.
- Continuous two-way communication through regular briefings and feedback loops kept partners updated on progress and emerging issues.
 - Non-traditional stakeholders (private waste collector firms, women's cooperatives) were engaged early and became valuable implementation partners and helped mitigate risks of third-party delays.
 - Formal MOUs were signed with councils and stakeholders, specifying handover processes, responsibilities and data sharing protocols to ensure long-term transparency and accountability.

Community participation & ownership

- Community-driven interventions such as local waste collection groups and village level steering committees increased acceptance and ensured that assets remained in use after the program's support was withdrawn.
- Gender inclusive training and involving women's associations from the early stages of the project led to meaningful improvements in project outcomes and facilitated creation of new market-value chains, such as women-led polyester-wool recycling.
- In a few cases, peer to peer demonstrations such as neighbour to neighbour training were used instead of centralized workshops and increased uptake and reduced training costs.

Gender & social inclusion

- A gender analysis was integrated at the screening stage to identify barriers (e.g. lack of toilets, safety concerns) and to design mitigation measures at the beginning of the projects, thereby avoiding barriers to participation emerging during the course of the project.
- Specific budget lines for gender responsive infrastructure such as safe working spaces for women were allocated to ensure these activities were not curtailed due to budgetary constraints.
- Women-led micro-enterprises (e.g. bottle refill kiosks) were promoted, deepening economic empowerment and ensuring the sustainability of the circular-economy model.

Financial & project management

- Strengthening internal financial management and bookkeeping skills proved crucial for handling large, multi-partner grants.
- Overspend limits ($\leq 10\%$ per sub-head) demanded close monitoring but can constrain flexibility. A balance between control and adaptability was required throughout the implementation stage and created certain implementation delays.

Regulatory & compliance

- Obtaining clearances from sectoral regulators (e.g., Maldives Food & Drug Authority for refill stations or IT based permissions by Otium) could be anticipated in the design phase to avoid operational delays.

- Compliance with safeguarding policies (e.g. PSEA) must be integrated from the start to ensure safe workplaces for women.

Logistics & supply-chain

- Import of equipment across borders was delayed by country specific customs procedures. Accounting for the complexity of the process, building time buffers and proactively preparing documentation would have reduced risks and delays.
- Where possible, local sourcing (wooden buckets, reusable bags) was used, reducing lead-times and supporting the local economy.

Technology & innovation adaptation

- Simple, low-tech recycling technologies that matched local capacity were more likely to be sustained as locals could be trained to maintain the systems. Similarly, digital solutions need to be accompanied with recurring training that consider evolutions necessary for adaptation to changing contexts.
- Context-specific waste-characterization studies were needed to design appropriate solutions (e.g. PET-wool conversion, plastic-bitumen mixes).
- New circular-economy concepts (bottle-rinse stations) were piloted on a small scale for a limited period of time before full roll out, allowing iterative refinements.
- The project may offer flexibility to tailor its interventions to the specific waste profile, underscoring the importance of conducting context-specific waste characterization before designing recycling or circular economy solutions.

Monitoring, evaluation & learning

- Regular bank reconciliation and ledger checks provided early warning of financial mismatches and supported tranche releases.
- Iterative testing and adaptive experimentation (e.g. pilot of bottling refill station) improved technical rigour and informed scale-up.
- Post-implementation surveys were carried out with households and businesses to capture behavioural changes and identify gaps for future cycles.
- Lessons-learned logs were archived after each major activity (e.g. after each training session), building an institutional knowledge base for rapid learning.
- Technical mentorship based on UNOPS experience in designing and implementing activities was highly valued.

Knowledge sharing & policy influence

- Producing policy briefs, videos and presenting results at multi-stakeholder forums raised the profile of solutions and led to formal commitments.
- Evidence-based communication was essential for influencing policy makers and securing future funding.
- Visual storytelling (short videos, infographics) showcased success stories and secured media coverage that reinforced the plastic-free narrative.
- Regional learning workshops were organised where grantees presented their circular-economy models, fostering cross-project replication and scaling.

Looking forward

The PLEASE project's grants were designed to develop smart solutions to plastic pollution and to promote the circular economy, and the results were impressive. Through the grant initiatives, we proved that targeted investment can achieve real, measurable reductions in plastic waste, and these projects are now ready to be scaled up.

The PLEASE project made sure every dollar counted by keeping financial management on track, and the PLEASE-funded grants met their commitments and delivered strong outcomes.

This success came from the interconnectedness of infrastructure, digitization, and capacity building:

- **Physical Infrastructure:** Such as trash booms, shredding equipment, recycling machinery, and refilling stations, which are necessary gear to manage the waste efficiently.
- **Digital Systems:** Apply tools that can track where the plastic goes and measure the impact.
- **Local Training:** Provide hands-on support for communities, teaching better segregation, collection, and safety practices.

These combined implementation approaches show that these initiatives can be successfully replicated anywhere.

Tangible Impact in Communities

These grants are creating value far beyond just cleaning up the plastic waste; they're building infrastructure, changing habits, driving awareness, and getting everyone to work together. For example, in Bhutan,

the grantees are using machinery to turn plastic into recycled polyester wool and raw materials for road bitumen, while in the Maldives, the projects are creating modular recycling systems to produce lumber and furniture as high-quality pieces suitable for luxury resorts.

What is useful for future programming

Along with diverse innovations, we have observed different business planning across the projects. Some organizations (such as Clean Maldives and Tribhuvan University) rely heavily on local government or community partners to keep their work going. Others (such as DokoRecycler, Green Roads, and Clean Bhutan) have a clear operational plan, are generating revenue, and directly manage the equipment and teams developed during the grant period.

Based on analysis of the grants, four key recommendations follow to support future projects to be more resilient and sustainable.

1. Funding consortiums of CSO/NGO, academia, and private organisations:

Recognising the unique value each type of grantee contributes, there is scope to adopt consortium-based approaches for giving consolidated grants. Such arrangements would benefit from:

- CSO and NGO supporting community engagement, outreach and administrative components.
- Academic institutions driving the research components, ensuring alignment with national policy and international goals.

- Private organisations providing business orientation, market access, and revenue channels needed to sustain long-term impact.

2. Incentivising potentially sustainable projects:

Entities that have established a diversified supplier base and have reduced their dependency on a single supplier for the plastic waste/pellets or similar procurement are more likely to ensure business continuity. Likewise, grantees that proactively identify and engage with buyers or end-users are better positioned to develop sustainable business models. Encouraging such forward and backward market linkages with incentives will strengthen value chains and increase the likelihood of post-grant sustainability for long-term impact. Incentives may include:

- **Access to future funding opportunities:** Grantees demonstrating strong market linkages and diversified models could receive preferential consideration or fast-tracked eligibility for future grants, challenge funds, or potential scale-up to higher value grants such as Regional Block Grants.
- **Technical Support or Mentorship:** Continued access to capacity-building workshops, expert mentorship, or business advisory services from the grant agency or its partners acts as a non-monetary incentive that supports long-term growth.

3. Ownership of assets created under grants:

Asset ownership and transfer mechanisms should be clearly defined at the project design stage, with due diligence on the receiving entity's capacity and economic viability. Where assets are to be transferred post-grant, a sustainability or business plan should be mandated to ensure continued utilization and maintenance. Establishing accountability frameworks and clear post-transfer ownership structures would help prevent asset underuse and ensure long-term value creation.

4. Contextual funding instruments:

Some grantees were willing to engage in debt-based funding instruments to scale operations. As a way forward, the following models could be considered.

- **Blended finance approach** as a transition pathway from pure grants to more sustainable financing models. Private organisations demonstrating operational viability, diversified revenue streams, and strong administrative partnerships may be engaged through debt or repayable grant instruments, allowing them to retain control of infrastructure while ensuring financial discipline and reinvestment of returns.
- **Grant-based approach** may include focused sustainability plans as a pre-requisite measured through parameters like structured MOUs, institutional partnerships, formal empanelment and diversified market linkages.

