

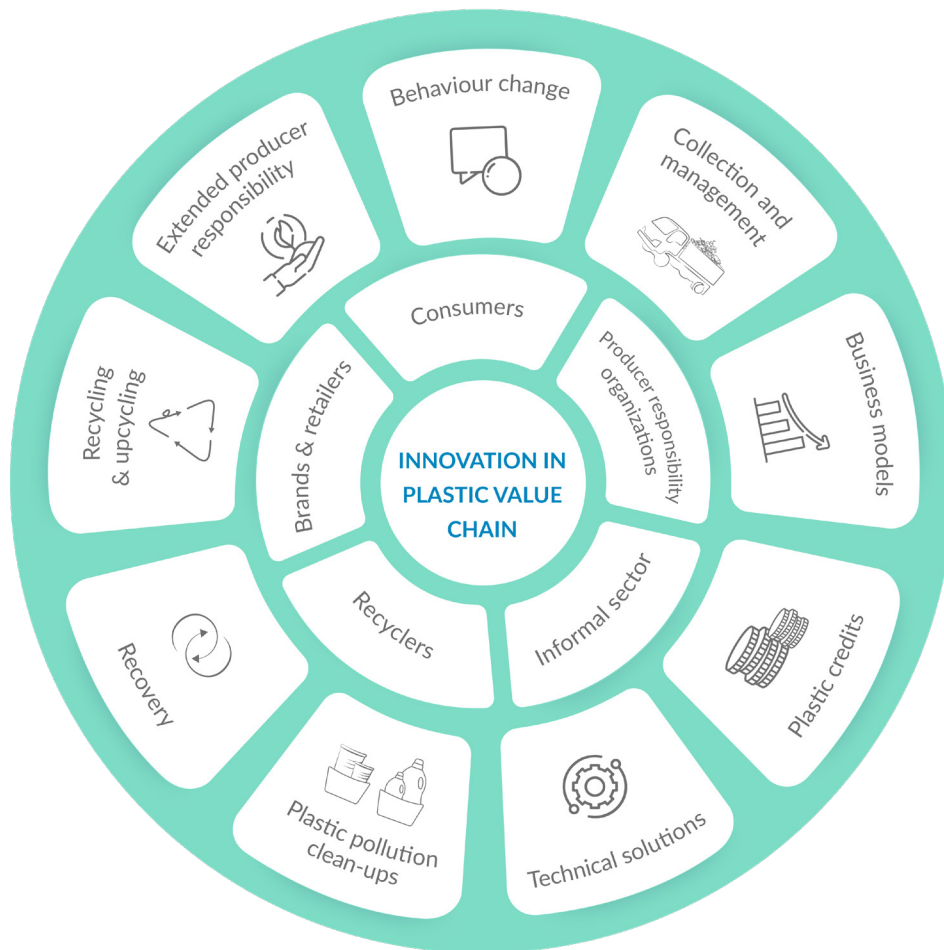
Circular solutions for plastic pollution

Measurable funding mechanisms that
empower communities and clean oceans

About the case study

This good practice case study is part of a series of knowledge products developed by the SEA circular project to showcase exemplary market-based solutions that bring about transformational changes in the way plastic is managed in the value chain. This series captures circular economy approaches, ranging from innovative business models to behaviour change initiatives, to address plastic pollution. These approaches form part of the SEA circular project's "circularity framework for the plastic value chain".

Circularity framework – plastic value chain



Turning the tide on ocean plastic



Seven Clean Seas has pulled

344,798 kgs

of plastic pollution out of oceans.

Seven Clean Seas pulls plastic directly out of the ocean. Through the organization's work, permanent change is happening in the world's seven most polluted areas.



Introduction

Seven Clean Seas (SCS) was founded in 2018 by social entrepreneurs Tom Peacock-Nazil and his wife Pamela Correia, who realized there was a huge opportunity to educate and engage companies to be environmentally and socially minded.

SCS has recovered more than

127,000 kg

of plastic pollution from
the marine environment alone.



- SCS is an ocean clean-up organization based in Singapore. Since its inception in 2018, SCS has recovered more than 127,000 kg of plastic pollution from the marine environment alone. The organization is focused on developing a funding mechanism that can generate capital to facilitate investment in infrastructure and technology solutions to stop plastic reaching the ocean.
- The funding mechanism is plastic offsetting, for which SCS was the first provider globally. SCS helps companies measure and reduce their plastic footprint and then offset their necessary plastic by investing in projects that tackle plastic pollution. This helps companies neutralize their impact on the planet and seas while redirecting funding towards developing the infrastructure and projects needed in the most affected areas.
- SCS has committed to recovering more than 10 million kg of marine debris from seven countries with the worst levels of plastic pollution by 2025, while formalizing the employment of 200 waste collectors. Since 2018, SCS has invested in ocean clean-up operations, remote island infrastructure and innovative technology.



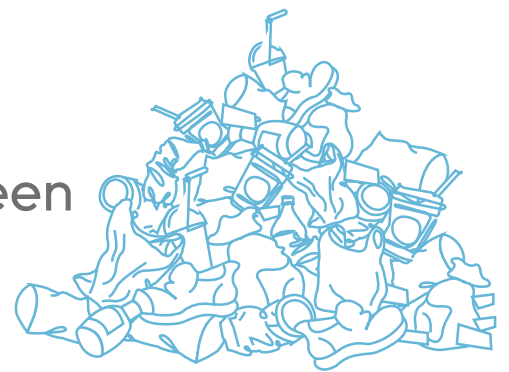
The issue

Every year, 11 billion kg of plastic waste enter the ocean.

Without action, this amount will more than double to **29 billion kg** by **2040**.

- Worldwide, 2 billion people have no access to proper waste management systems, which are limited, if not lacking or even absent, in many rural and island locations.
- Much of the current waste management industry relies heavily on these individuals and fails to treat them fairly or improve their working conditions.
- Plastic waste collection in rural and island locations often does not make economic sense and so does not readily exist. Reasons include the locations themselves, a lack of access to adequate recycling infrastructure and challenges when aggregating meaningful volumes due to low geographic plastic density or low residual infrastructure.
- How, then, can small rural and island locations have some form of waste management that will prevent plastic leakage while providing fair employment to the informal sector?

Existing waste collectors earn between **USD1 and 8 a day** and have no job security, personal protective equipment, health care or pension payments, among others.





Interventions



SCS looked at how it could develop an economically sustainable funding mechanism to:

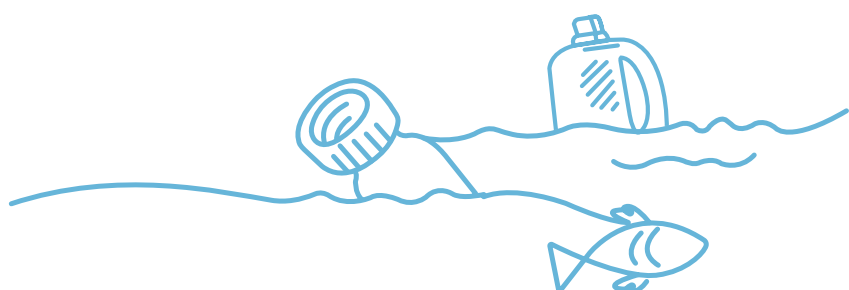
- scale up ocean and river clean-ups
- build waste management infrastructure in remote and island locations, and
- empower communities to reduce their plastic pollution.

SCS developed a financial mechanism that subsidizes sustainable, on-the-ground solutions for collecting, recovering and separating waste from areas with high leakage. To ensure significant impact, SCS chose to work in the seven most plastic-polluted countries in the world: China, Indonesia, Malaysia, the Philippines, Sri Lanka, Thailand and Viet Nam.



What is innovative about this?

Traditionally, waste management models that require participation for collecting recyclable resources only work and incentivize if the value of the collected materials exceeds the cost of aggregating, sorting, cleaning and preparing the resource for its next use.



Traditional waste management



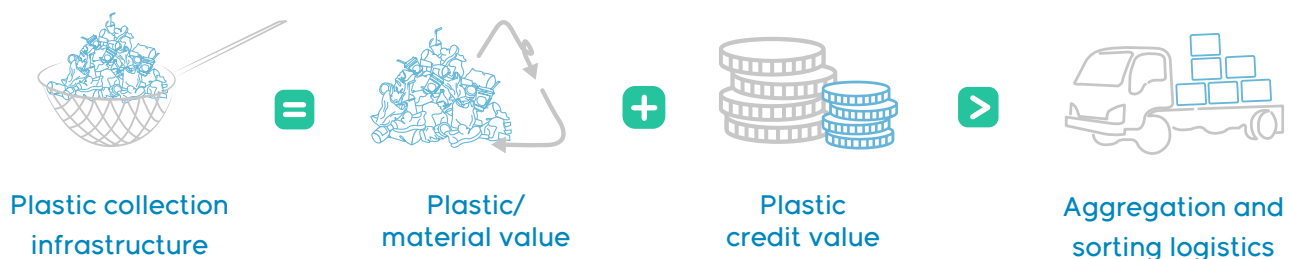
The traditional model:

- struggles to achieve profitability due to low oil/virgin plastic prices, thus preventing new investments
- inhibits the formal employment of waste collectors due to the aforementioned value constraints
- only incentivizes valuable plastic collection, leaving problematic plastics in the environment
- discourages investment in unprofitable locations (rural and island locations).

Such a model can be discarded easily, especially if the alternatives are more attractive and cost-effective.

Some form of subsidizing element, decoupled from the factors that influence the plastic material's value, would need be included. In SCS's improved model, plastic credit values are identified as the stabilizing element.

Plastic offset subsidized waste management



The plastic offset model:

- provides supplementary funding sources not linked to oil/virgin plastic prices
- uses weight as the main metric, which incentivizes the collection of all plastics, thus equally benefiting the environment
- enables investment in previously unprofitable locations (rural and island locations).

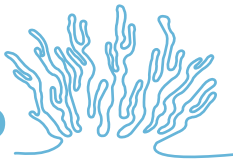


How does it work?

By using plastic offsetting to subsidize waste management, SCS addresses both midstream waste management infrastructure and downstream environmental collection of the plastic waste, while developing and running projects closely linked to the communities they serve.

One such initiative is a rural island waste management and environmental collection project on Bintan Island, which is part of the Riau Islands in Indonesia. The islands currently lack a plastic waste management solution and have high levels of ocean plastic leakage. Furthermore, Bintan Island is custodian of a 1.2 million ha marine protected area (MPA) where only 50 per cent of the coral reef ecosystems and mangrove forests remain in good condition.

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SCS's goal on Bintan Island is to recover plastic from the MPA to the east while simultaneously installing a materials recovery facility (MRF) to collect, sort and process recovered plastics from the surrounding communities to stop plastic leakage at source. More recently, SCS has also offered work to those whose livelihoods in the tourism industry have been decimated by the COVID-19 pandemic, at the same salary level as their previous jobs.

The project is funded through the
**sale of plastic offsetting credits to
corporations.**



Plastic offsetting for corporations

- SCS works with companies to understand their waste footprint and diversion rates through waste audits, which are used to recommend reduction strategies for plastic consumption.
- Companies can purchase plastic credits directly through SCS as a means of offsetting unavoidable plastic footprints. The offset can be incremental or total, helping companies achieve plastic neutrality.



1 plastic credit = 1,000 kg of plastic



- SCS agrees on a collection window with the credit buyer and payment is made up front.
- SCS removes or intercepts the equivalent amount of plastic pollution (in kg) from the marine environment.
- SCS issues a plastic credit certificate to companies with information about the projects.



What do plastic credits buy?

Collection supports the diversion of the waste to and from the islands' existing landfills.

Waste is collected in three ways:

1. Community-level interception of the plastic waste from coastal communities, local schools, religious groups, businesses and local government.
2. Environmental (mainly coastal) collection by paid employees. Collection crews are compensated and supported by SCS's local non-governmental organization (NGO) at 1.5 times the prevailing minimum wage.
3. A river collection system using SCS's in-house river plastic recovery technology (1.5-kiloton capacity, equivalent to 146 million PET bottles per year), which is powered by solar and wind and built and maintained locally with the community in mind.



All SCS-issued plastic credits match the volumes of plastic waste collected and are



That matching is crucial for transparency and accountability.

- The materials are aggregated, sorted and stored in a decentralized MRF on Bintan Island. Some are upcycled into materials for immediate use (i.e. collection bins or waste bins that become part of the basic waste management system), with others undergoing necessary secondary processing to return them to the circular economy.
- Each kg of plastic collected is batched, assigned a unique identification number and recorded in a registry. The records are verifiable and can be cross-checked, ensuring that credits are only sold once and then retired (thereby avoiding double counting).
- The SCS project on Bintan Island is audited and awaiting certification from the NGO Zero Plastic Oceans and the 3R Initiative.
- All SCS-issued plastic credits match the volumes of plastic waste collected and are 100 per cent additional. That matching is crucial for transparency and accountability.
- Plastic offsetting mobilizes corporate capital to provide funding to help prevent vast amounts of plastic leakage.



Results – the impacts

- As a TRUE-certified waste auditor, SCS has collected more than 127,000 kg of plastic from the environment, which it can sell as offsets to companies. The first sale for 1,400 kg was made in February 2018 to Einhorn and the service has since been repeated three years in a row.
- Einhorn's necessary plastics are used in packaging for the company's health products. Despite vast business growth, however, Einhorn has managed to lower the amount of plastic packaging it uses per item, which means its necessary plastic usage has not increased.
- The sale of plastic credits generates capital, which can be invested in plastic leakage prevention and plastic recovery infrastructures. Investments in 2021 included an MRF and the pilot River Plastic Recovery System.
- The additional funds have allowed SCS and its partners to offer formalized employment with fair wages and safe working environments to the existing 22 community workers on Bintan Island and as the project expands, it is expected to reach 50 workers in the coming year.
- Thanks to SCS's efforts, 127,000 kg of plastic has been prevented from leaching into the environment, thus saving marine and coral life.



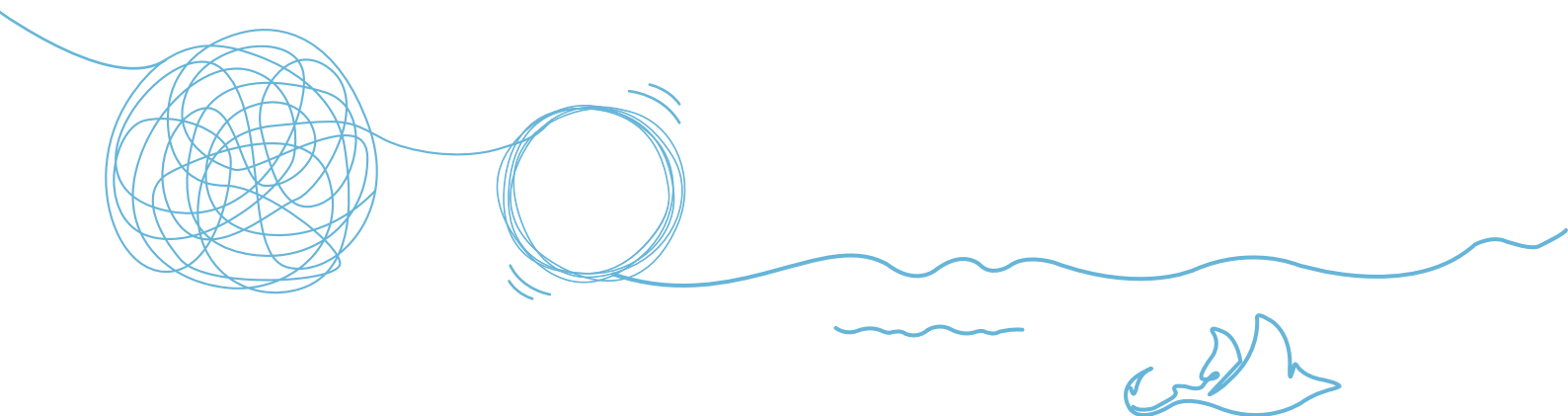
Challenges

Education. Companies need to be informed that purchasing plastic credits should be one of the last activities for mitigating the environmental impacts of their plastic use. Reduction through improved design, using alternative materials and reusing strategies, still needs to be the ultimate goal.

Other schemes. The market may experience fragmentation resulting from other plastic neutrality schemes that broker and price plastic credits that do not reflect the real social or environmental costs of the plastic pollution.

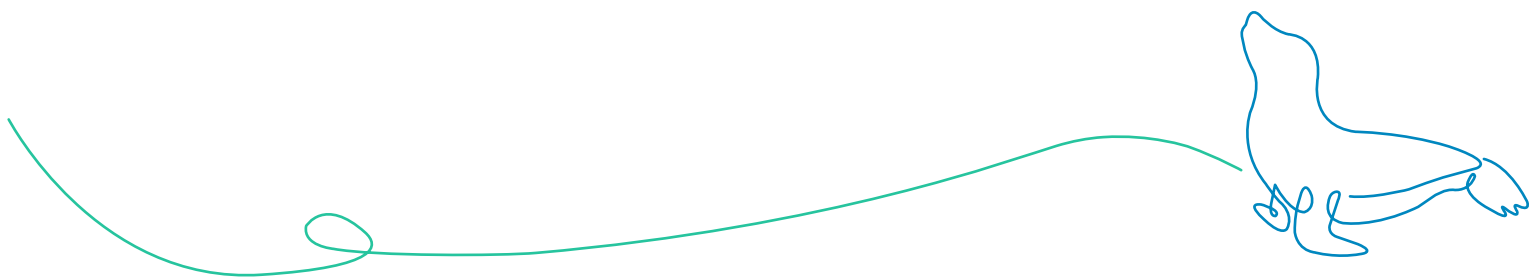
Scalability. Another challenge is to ensure that projects scale up fast enough to match SCS's obligations to companies that have purchased offsets. This can be achieved with ease through projects that make use of formalized employment when the need arises.

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Sustainability

- The workforce and local infrastructure can be ramped up through funding from corporate buyers.
- The model can also be scaled quickly to expand to other locations in the Riau Islands.
- Growing demand: SCS will target fast-moving consumer goods companies, small and medium-sized consumer goods companies, multinational corporations and companies seeking out corporate social responsibility partnerships. Several large multinational corporations already have net-zero plastic footprint targets.



Moving forward

- Regulatory requirements such as extended producer responsibility, internal stakeholder drive and external social movements from ecologically-minded customers would greatly incentivize and encourage companies to adopt plastic offsetting.
- More than 100 companies in the last year have expressed interest in or inquired with SCS about offsetting their necessary plastic consumption. Market growth and potential are accelerating.
- Projects were funded and scaled up dramatically in 2021, resulting in the employment of more workers and increased social impact.
- By 2025, SCS will have projects in the seven most plastic-polluted countries in the world and will have recovered/diverted 10 million kg of plastic from the ocean.

Plastic offsetting: Companies can offset unavoidable plastic use by investing in projects that tackle plastic pollution in high-risk locations, such as remote and island communities.



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We thank Seven Clean Seas for sharing details of their exemplary innovations in the SEA Circular project's series on the plastic value chain.



The SEA circular project Reducing marine litter by addressing the management of the plastic value chain in Southeast Asia is implemented by the UNEP Regional Office for Asia and the Pacific and the Coordinating Body on the Seas of East Asia (COBSEA), with funding support from the Government of Sweden. SEA circular aims to reduce and prevent plastic pollution and its impact by working with governments, businesses, civil society, academia and international partners. The initiative promotes market-based solutions and enabling policies to transform plastic value-chain management, strengthens the science base for informed decision making, creates outreach and raises awareness. The project leverages COBSEA's regional mechanism to tackle the transboundary challenge of marine litter in a harmonized manner.

 www.sea-circular.org

