



GLOBAL
PLASTIC ACTION
PARTNERSHIP



Unlocking the Plastics Circular Economy: Case Studies on Investment

December 2022

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“This collection of case studies demonstrates that investment into the circular economy for plastics is not only possible, but profitable. With the negotiations for a global, legally binding instrument on plastic pollution now under way, the Global Plastic Action Partnership stands ready to support governments to identify policy options conducive to investment, and financial institutions to identify emerging opportunities for investment across the plastics value chain and in emerging and developed markets alike.”

Kristin Hughes

Director of the Global Plastic Action Partnership and
Member of the Executive Committee, World Economic Forum

“The legally binding instrument on plastics is a crucial building block to advancing solutions to the waste problem globally. Identifying the right financial mechanisms and sources of capital will be a key area of focus in the negotiations. Great strides have been made in investing in the circular economy for plastics, yet more collaboration is needed between policymakers and the private sector. Governments should be aware of the significance of a conducive policy environment to facilitate sustainable investments, particularly in emerging economies.”

Juliet Kabera

Director General, Rwanda Environment Management Authority



“As this set of case studies demonstrates, there is a compelling argument to be made for the investment opportunity in plastics circularity by the private and public sectors. At Lombard Odier, we recognize the significance of driving multiple sources of capital, and asset and wealth managers like us can expect attractive financial returns and sustainability outcomes through strategic investments in the plastics circular economy.”

Michael Urban

Chief Sustainability Strategist, Lombard Odier

Executive Summary

It is estimated that 11 million tonnes of plastic currently flows into the ocean every year, and, without significant action, that number will grow to 29 million tonnes each year by 2040. Solutions – both downstream and upstream – to this potential disaster exist, yet the transition to a circular economy will require investment of \$1.2 trillion,¹ as well as a significant departure from the status quo, to reach the necessary infrastructure scale.²

While both the private and public sectors are mobilizing to address the plastic waste challenge, the problem's scale requires commensurate action. Voluntary corporate commitments, supportive policy frameworks, and relevant finance mechanisms are all enabling greater private investment to tackle plastic pollution and cultivate the circular economy — one that promotes the elimination of waste and the sustainable use of natural resources. Financial institutions should take note: opportunities are increasingly arising.

29M



29 million tonnes of plastics will flow into the ocean every year by 2040 without significant action.

\$1.2T

The transition to a circular economy will require investment of \$1.2 trillion to reach the scale of infrastructure needed by 2040.

About the publication

As a key pillar of its work, the Global Plastic Action Partnership (GPAP) creates strategic tools and resources that facilitate investment in a circular economy for plastics. This work supports GPAP's ongoing efforts to unlock financing, identify barriers to investment, and highlight emerging opportunities while delivering solutions in partnership with global and local stakeholders.

To date, the majority of investment in this space is financing downstream activities in plastics waste management and recycling. This series of case studies demonstrates how capital from a variety of sources is influencing plastic material flows across the value chain, with an eye to increasing circularity. This portfolio includes mature examples, such as investments in rPET infrastructure in Mexico, which benefited from multiple rounds of financing, as well as venture-backed, early-stage innovations in reusable packaging and digital transactions for recyclable waste. Also included are high-potential analogous examples, such as the SUNREF program scaling renewable energy in Nigeria, and green bond issuances by the Indonesian government.

Policy plays a critical role in enabling the flow of private capital to the sector. As each case included here illustrates, policy stimulates investor interest by supporting a cohesive ecosystem for plastics circularity, incentivizing investment, and reducing risk. Originally published in February 2022, this updated publication now includes a dedicated supplement for policymakers, along with key takeaways and implications. The Intergovernmental Negotiating Committee (INC) of the United Nations (UN) is working towards establishing an international legally binding instrument for plastic waste, marking a watershed for both public and private sectors alike. Given the recent momentum and attention from UN Member States on this topic, it is critical to consider the impact of new policies and regulations on the nature and scale of private investment into the waste management, recycling, and circular plastic sectors.

Investments in the Plastics Circular Economy: Key Learnings from Ten Case Studies

Momentum is building for plastics circularity. With the negotiation process underway to establish a legally binding instrument on plastic pollution by 2024, public and private sectors are turning their attention to addressing this challenge. Activities across the value chain are signaling opportunities for policies and regulations to take hold, for market-based solutions to scale, and for private investment to flow into the sector. In emerging markets, where the need for holistic solutions may be greatest, there is an urgent need to advance the tipping point at which early- and growth-stage investments scale and mature, providing an entry point for later-stage, larger-ticket investors.

1

Governments at all levels play a key role in catalyzing investment in plastics circularity.

As the case studies illustrate, governments have driven public and private investment into plastics circularity. In the coming months and years, governments will have a unique responsibility and opportunity to further foster solutions in three key ways:

- Creating a cohesive ecosystem for plastics circularity
- Incentivizing investments
- Reducing or sharing risk by developing domestic capital markets



Figure 1: Unlocking Investment: The Role of Policy

Policies at the national and subnational levels are helping to facilitate investment.



① Policies that support a cohesive ecosystem for plastics circularity

- a. Design for circularity and content standards, including minimum recycled content requirements (as highlighted in Tridi Oasis in Indonesia, Indorama Ventures in Emerging Markets, and various reuse-refill models)
- b. Extended Producer Responsibility (EPR) and similar schemes (e.g., Coca-Cola FEMSA in Mexico and Recykal in India)



② Policies that incentivize investment

- a. Financing mechanisms (e.g., tax credits) that stimulate end-market development (such as the Indorama-Coca-Cola joint venture in the Philippines)
- b. Sustainability-linked corporate bonds (e.g., Natura Cosméticos S.A. in Brazil)



③ Policies that reduce or share risk

- a. Blended financing (e.g., blue loan restructuring in Belize and Mr. Green Africa in Kenya)
- b. Political risk insurance (e.g., Belize)
- c. Developing and deepening financial markets (e.g., green bonds in Indonesia, SUNREF in Nigeria)



With new policies and regulation on the horizon, brands and strategic investors in the plastics value chain play an important role in boosting demand and supporting a more circular economy for plastics – as demonstrated most clearly to date within the PET recycling supply chain.

- **Coca-Cola FEMSA:** As the Government of Mexico mulled legislation to improve the country's management of solid waste, Coca-Cola FEMSA, in collaboration with bottling and plastics industry peers including PepsiCo bottler GEPP, supported the establishment of ECOCE (Ecología y Compromiso Empresarial, or Businesses Committed to Environmentalism), a non-profit dedicated to improving recycling rates in Mexico. Using price incentives to encourage greater PET bottle collection, the consequent increase in recycling rates and reliability of local rPET (recycled PET) feedstocks helped mobilize capital to develop local recycling infrastructure. Early on, this capital was sourced from the International Finance Corporation (IFC), a private sector-focused global development institution, and other commercial-return seeking institutions. Subsequent capital came from recycled plastic stakeholders in Mexico – most recently through investment by Coca-Cola FEMSA funded by the tightly priced issuance of a green bond, for which Morgan Stanley served as joint bookrunner. The aggregated capital helped create domestic PET processing infrastructure, broadened the number of market participants engaged in tackling plastic waste, and increased the quantity of recycled material in plastic packaging in Mexico.
- **Indorama Ventures Ltd.:** With strong demand from its global customer base and a drive to advance its own environmental, social, and corporate governance (ESG) credentials, Indorama Ventures Ltd. (IVL), the world's largest producer of PET bottles, committed to double its recycling capacity by investing \$1.5 billion in processing facilities across five strategic emerging markets. To achieve this, IVL secured a blue loan financing package valued at \$300 million from three development finance institutions (DFIs): the International Finance Corporation (IFC), Asian Development Bank (ADB), and Deutsche Investitions- und Entwicklungsgesellschaft (DEG). The new financing generated further investment in recycling infrastructure by IVL. This innovative financial instrument is the world's first independently verified, non-sovereign blue loan, and has fostered the development and acceptance of issuance guidelines for the nascent blue bond market.
- **Natura Cosméticos S.A.:** In 2021, Natura Cosméticos S.A. (Natura), a wholly owned subsidiary of Natura &Co – issued a sustainability-linked bond (SLB), which included increased use of recycled plastic in the company's packaging as one objective. A majority of Latin American SLBs to date have also included GHG reduction targets, alongside a recycled plastics mandate (as Natura did) that positions the circular economy as an instrument to attain climate objectives. Natura's bond garnered strong investor interest, with Morgan Stanley acting as joint bookrunner. Building incentives into Latin American SLBs for issuers to meet their ESG targets could underpin increased issuance in other emerging markets, where accountability and transparency are often lacking.
- **Reuse/refill models:** Though generally at an earlier stage, support for alternatives to single-use packaging is also growing in response to policy development. In Europe, consumer interest has driven regulation of single-use plastics, and in turn fostered the emergence of new business models. A Directive on single-use plastics imposed by the European Union in 2019, which was followed by an anti-waste law issued in France in 2020, incentivized reuse and refill models, creating an opportunity for growth of upstream solutions. European start-ups Pyxo and Vytal have reaped the benefits of this development, securing early investment in their reusable container business models from venture capital, family offices, and others. Another notable deal, PepsiCo's acquisition in 2018 of Sodastream, signaled the advent of a global "Beyond the Bottle" strategy. Such examples can pave the way for emerging economies, where policy change and new business models – like Algramo in Chile – are already taking root.

Impact-focused, strategic, and concessionary capital sources – together with pioneering companies and governments – have driven early-stage investment in downstream and upstream solutions.

SMEs benefit from a combination of de-risked financing and technical assistance to scale. Catalytic investors and blended finance structures are preparing a pipeline for later-stage investment in the near future.

- **Recykal:** The Modi government's Swachh Bharat (Clean India) mission helped to catalyze Recykal's solution to bring transparency and traceability to India's plastic waste supply chain via a digital platform. The waste management start-up secured \$26 million in funding from domestic and international investors, including Morgan Stanley, in just three years. By encouraging the migration of plastic waste transactions to a digital marketplace, Recykal's model also promises greater standardization and reliability of associated data, bolstering the investment case for allocating capital to the sector.
- **Mr. Green Africa:** Long-term, social impact-focused investors, such as the Global Innovation Fund, supported and sustained Mr. Green Africa (MGA), a start-up plastics collection and recycling company in East Africa, in its early days. More recently, a diverse group of impact and plastics circularity-minded entities has invested to increase the company's production capacity for higher-quality recycled plastic pellets,

helping to meet the demand created by consumers goods manufacturers' voluntary commitment to minimum recycled content in their packaging. Similarly, the promulgation of extended producer responsibility (EPR) regimes is expected to support prospective regional expansion and require additional capital raisings, thus providing an opportunity for more traditional commercial investors to fund the company's future growth.

- **Tridi Oasis:** Circulate Capital, with a guarantee from United States Development Finance Corporation, supported the young company in building its first commercial rPET recycling facility in Tangerang, Indonesia, and further helped Tridi Oasis scale and weather economic challenges during the global COVID-19 pandemic. As policy-driven demand for rPET grows, ALBA, a major global player in the PET packaging value chain, created a joint venture with Tridi Oasis in 2022, with the intention to further increase the company's processing capacity to help meet global demand.





Governments also play a central role in the development of domestic capital markets through green bond issuances and loans. The development of circular economy solutions can be fast-tracked by linking to impacts on climate and oceans, as well as lessons learned in analogous sectors.

- **Indonesia:** The government of Indonesia implemented green sukuk (bond structures compliant with Sharia, or Islamic religious law), green bonds, and Sustainable Development Goal (SDG)-linked bonds that raise capital for infrastructure – including waste management solutions – in the country, and provide a model for further development of capital markets domestically and beyond.
- **Belize:** The government of Belize, together with Credit Suisse and The Nature Conservancy (TNC), devised a debt conversion to support marine conservation, under the auspices of TNC’s Blue Bond for Conservation program. The proceeds of a \$364 million issuance of pass-through notes were then used to purchase a quarter of Belize’s outstanding debt at a 45% discount. The resulting savings allowed the government to commit to financing marine conservation efforts over a 20-year period. Such solutions hold promise for circular economy projects that directly impact marine pollution.
- **SUNREF:** With support from Agence française de développement (Afd) and United Bank for Africa, the SUNREF green finance program sought to remove financial and technical obstacles that prevented financial institutions in emerging markets from extending credit to local businesses for investments that further the transition to a green economy and support the UN Sustainable Development Goals (SDGs). This innovative initiative can be a model for investment in upstream and downstream plastic waste solutions.

Emerging markets are key to charting a new course for a circular plastics economy and eliminating plastic pollution – if we can unlock financing at the requisite scale.

The case studies included herein illustrate the paths to investment, and the critical roles that governments at all levels play in facilitating necessary capital flows. They also describe past successes in specific plastics supply chains, such as PET, and in analogous sectors like renewable energy, and offer a glimpse of emerging and future

solutions as the investment landscape matures. As public and private sector actors play an increasingly larger role in driving finance, and with negotiations for an internationally binding instrument to address plastic pollution now underway, this publication becomes applicable to a broader group of actors.

Case studies

Case Study 1:

Coca-Cola Bottler Catalyzes Growth of rPET Infrastructure in Mexico

Summary: Mobilizing finance to address plastic waste in emerging markets requires coordinated action among businesses, governments, and other stakeholders in the value chain. This case study demonstrates the impact of major financing initiated by voluntary corporate action and development finance institutions, while noting government policy's potential to create the necessary conditions for action. While this effort has focused on PET, the model is replicable for other recyclable plastics.

As the Government of Mexico sought ways to improve waste management, Coca-Cola FEMSA – the world's largest Coca-Cola bottling franchise and a leading Mexican beverage company – in collaboration with PepsiCo and their bottling and plastics industry peers, helped establish ECOCE (Ecología y Compromiso Empresarial, or Businesses Committed to Environmentalism), a non-profit created to improve recycling rates in Mexico. Initially using price incentives to encourage greater PET bottle collection, the consequent increase in recycling rates and reliability of local rPET feedstocks led to the mobilization of capital to develop local recycling infrastructure. Early on, this capital was sourced from the International Finance Corporation (IFC), a private sector-focused global development institution. Subsequent capital came from recycled plastic buyers – most recently Coca-Cola FEMSA – via the issuance of green bonds. The aggregated capital helped create a domestic processing industry, broadened the number of market participants tackling plastic waste, and increased the quantity of recycled material in plastic packaging in Mexico.

ECOCE's founding in 2002 proved timely, as the national government

enacted the General Law for the Prevention and Integral Management of Residues the following year. This federal waste management legislation required large waste generators to develop plans to reduce their waste output and increase its value. It also required any waste produced to be treated in an environmentally sound manner.

In its early years, ECOCE worked with the Mexican subsidiary of Houston-based Avangard Innovative, a large PET aggregator with strong links to informal waste collection groups. It offered price incentives to encourage PET bottle collection and provided benefits to waste workers and their families, including health and safety training for workers and education for their children.

In the absence of domestic processing capacity, the recovered material was initially exported, primarily to China and the US. In 2006, Avangard and Promotora Ambiental S.A. de CV, a leading Mexican services business, formed PetStar, to build a plant for processing food-grade rPET resin for bottle-to-bottle application. PetStar partnered with NGO Mundo Sustentable, to monitor social risks, including child labor, in its supply chain.



At Coca-Cola FEMSA, sustainability is at the heart of our organization. For many years, in collaboration with strategic partners such as IMER, ECOCE, and recently with PLANETA, we have planted the seeds for relevant investments and created real alternatives to promote a circular economy for PET. We have clear goals, and we are committed to collecting 100% of the packaging that we put on the market by 2030 to achieve a World Without Waste.

John Santa Maria Otazua
Chief Executive Officer,
Coca-Cola FEMSA





Morgan Stanley's decades-long commitment and leadership in sustainability help drive innovation and transformational progress across global capital markets. We are pleased to have served as joint bookrunner for Coca-Cola FEMSA's successful recent green bond issuance, which represented the largest green corporate bond ever in Latin America at the time of issuance. We will continue to work with corporations like Coca-Cola FEMSA to advance circularity in emerging markets, and make tangible positive impacts for our clients, the environment, and society.

Matthew Slovik
Managing Director and Head of
Global Sustainable Finance,
Morgan Stanley

By creating a reliable supply of rPET feedstock in Mexico, ECOCE was instrumental in the extension of a \$24.5 million loan to PetStar in 2009, to build a \$33.5 million recycling plant near Mexico City. Utilizing a blended finance approach, IFC provided \$8 million in senior debt and \$5 million as a subordinated loan, with an additional \$11.5 million syndicated loan from Cordiant Capital. The plant's success compelled Coca-Cola de Mexico and its domestic bottlers to invest \$34 million to double PetStar's capacity in 2012. Industria Mexicana de Reciclaje (IMER), a joint venture between Coca-Cola Company, ALPLA, and Coca-Cola FEMSA, also launched in 2006. The first bottle-to-bottle processing facility in Latin America, it has since produced more than 150,000 tonnes of recycled PET.

The PET recycling rate in Mexico increased from 8.8% in 2002 to 56% in 2018. By 2011, enough progress had been made that ECOCE was able to phase out the price subsidy it had initially offered to encourage collection. In total, an estimated \$339 million was invested in domestic recycling infrastructure by 2018, encompassing 16 PET recycling plants and an overall annual capacity of 312,000 tonnes.

In August 2020, Coca-Cola FEMSA issued a \$705 million green bond. The quality of PET feedstock available in Mexico meant increased use of recycled PET content could be included in the bond's sustainability targets.

Demand for the green bond was so strong that it was 11 times oversubscribed at its peak, which allowed the issuer to tighten the bond's pricing – reflecting an implied discount afforded by the market to green bonds over non-green equivalents.³ It also represented Coca Cola FEMSA's lowest ever coupon, and the lowest coupon for a Latin American issuer in more than 10 years. The markets also

saw a general tightening in the yield curve for the company's outstanding US dollar-denominated debt following the green bond's pricing.

In acting as joint bookrunner for the issuance, Morgan Stanley contributed to the firm's Plastic Waste Resolution, a commitment to prevent, reduce, and remove 50 million tonnes of plastic waste from entering rivers, oceans, landscapes, and landfills by 2030.

Coca-Cola FEMSA's first green bond report following the issuance, in June 2021, stated that the company "used an average of 29% recycled PET resin (rPET) in its plastic bottles, an increase from 20.8% in 2018, reflecting the benefits of approximately \$225 million allocated in rPET projects from green bond proceeds."

The green bond's steady trading post-issuance and the sustained demand from institutions at its launch foreshadowed another oversubscribed offering by Coca-Cola FEMSA: the first-ever issuance of sustainability-linked bonds (SLBs) in the domestic Mexican debt markets, a \$470 million offering in September 2021 that was 2.1 times oversubscribed. In furtherance of its sustainability commitments, Coca-Cola FEMSA announced a joint venture with ALPLA in January 2022 to invest \$60 million in a new recycling plant in Mexico's southeastern state of Tabasco. Known as Planta Nueva Ecología de Tabasco, or PLANETA, the facility will produce 35,000 tonnes of rPET, and create an estimated 20,000 new jobs, including in rPET collection.

The combination of early leadership by a corporation, the creation of a non-profit with a clear aim, supportive government policies, and significant private capital have fostered tremendous growth in a nascent industry, vastly improving sustainable plastic waste management practices in Mexico.



Timeline

- | | |
|------|--|
| 2002 | ECOCE is created |
| 2003 | Government of Mexico passes federal legislation on waste management: the General Law for the Prevention and Integral Management of Residues |
| 2005 | IMER (Industria Mexicana de Reciclaje) is formed, a joint venture between bottle maker ALPLA and the Coca-Cola Company to establish the first food-grade, bottle-to-bottle PET recycling facility in Latin America |
| 2006 | PetStar is formed |
| 2009 | IFC and others provide \$24.5 million in loans to PetStar |
| 2012 | Coca-Cola de Mexico and others invest \$34m to double capacity of PetStar |
| 2018 | A total of \$339 million has been invested in recycling in Mexico |
| 2020 | Coca-Cola FEMSA issues its first green bond |
| 2021 | Coca-Cola FEMSA issues the first ever sustainability-linked bond in the domestic Mexican debt markets |

\$339M

An estimated total of \$339m was invested in domestic recycling infrastructure by 2018 in Mexico.

56%

The PET recycling rate in Mexico increased from 8.8% in 2002 to 56% in 2018.



Case Study 2:

Indorama Ventures Secures the World's First Blue Loan to Expand Recycling Capacity Across Emerging Markets

Summary: With strong demand from its global customer base and a drive to advance its own environmental, social, and corporate governance (ESG) credentials, Indorama Ventures Ltd. (IVL), the world's largest producer of PET bottles, committed to double its recycling capacity by investing \$1.5 billion in processing facilities across five strategic emerging markets. To do so, IVL secured a blue loan financing package valued at \$300 million from three development finance institutions (DFIs), which in turn funded the company's additional investments in recycling infrastructure. This innovative financial instrument is the world's first independently verified, non-sovereign blue loan, and has extended the development and acceptance of issuance guidelines for the nascent blue bond market.

In response to strong demand from customers and the introduction of new regulations in key markets – like the EU and US – that increasingly allow for recycled content in food-contact packaging, Indorama pursued a significant investment in plastics circularity. IVL's subsequent investment illustrates how recycled content requirements and circular economy-related tax breaks can incentivize private sector action on plastic waste.

IVL is a global intermediate petrochemicals producer listed on the Stock Exchange of Thailand. Majority owned by the Lohia family, it is one of the largest vertically integrated plastics producers in the world. IVL's 2019 investment aimed to increase its recycling capacity to 750,000 tonnes per year, thereby recycling 50 billion PET bottles annually by 2025 and reducing the company's carbon footprint.



As a global leader in PET production and recycling, we are honored to receive the first blue loan from IFC. We are building the recycling infrastructure needed to divert waste from the marine environment. By recycling post-consumer PET bottles into new bottles, we give waste an economic value. This drives improvements in waste collection systems, meaning less waste and cleaner oceans. Innovative financing will be key to catalysing transformation of the circular economy globally, and Indorama's success highlights the potential for further growth of blue financing instruments to help speed this transition.

Yashovardhan Lohia
Chief, Sustainability Officer,
Indorama Ventures Ltd.

In November 2020, IVL secured its blue loan financing package from three development finance institutions: International Finance Corporation (IFC), Asian Development Bank (ADB), and Deutsche Investitions- und Entwicklungsgesellschaft (DEG). The loan package's proceeds are currently being invested in expanding IVL's recycling capacity in Thailand, the Philippines, India, Indonesia and Brazil. This new capacity will divert significant volumes of plastic from landfills, open dumps, and the ocean and encourage a more circular economy.

The ADB's \$100 million contribution to the package – \$50 million of which came from Leading Asia's Private Infrastructure Fund, a co-financing initiative established by ADB and the Japan International Cooperation Agency – was its first independently verified, non-sovereign blue loan, and followed Blue Natural Capital Financing Facility's Blue Bond Guidelines. This included requiring the borrower to commission an environmental and social compliance audit report from DNV GL.

IFC, which contributed \$150 million to the blue loan, identified the following environmental and sustainability benefits of the financing package:

- Diversion of PET waste from land and marine environments through recycling
- Reduction of greenhouse gas (GHG) emissions by replacing virgin PET with recycled PET
- Implementation of other sustainability projects, such as resource efficiency and renewable energy
- Promotion of a circular economy for PET bottles and the catalyzation of market changes by demonstrating innovative business models and best practices for recycling PET at scale.

Subsequently, in March 2020, IVL announced the creation of a 70:30 joint venture with Coca-Cola Beverages Philippines, Inc., to construct a greenfield bottle-to-bottle recycling plant in the country's Cavite province. The new \$20 million facility, which became operational in 2022, can process 30,000 tonnes of plastic – or almost 2 billion plastic bottles every year – with an annual output of 16,000 metric tonnes of recycled PET resin and additional clean PET flake.⁴ The Philippines' Board of Investment approved the project's status as a pioneer project under the Omnibus Investments Code, created to encourage private investment. This designation means the project qualifies for six years of income tax holidays, versus four years holidays for non-pioneer ventures.

While there is currently no legislation in the Philippines mandating a specific amount of recycled content in plastic packaging, globally, Coca-Cola has committed to recover and recycle one bottle for every bottle that it adds to the market by 2030. The Philippines' Food and Drug Administration is also considering several applications for the use of rPET in food-grade products, with approval of these uses expected to set a precedent for substituting recycled for virgin resin. Despite these indicators of strong future demand, there is currently insufficient domestic recycling capacity to achieve companies' aggregated recycling targets for 2030.

In July 2021, IVL announced the planned construction of a new facility in West Java, Indonesia. Expected to open in 2023, the plant will recycle almost 2 billion PET bottles annually.

Although it is too soon to see a significant impact on diverted plastic or GHG emissions reductions, this move from a PET industry leader has the potential to drive meaningful change in plastic recycling regulation in emerging markets.



IFC is pleased to support IVL to finance scalable solutions to address the scourge of plastic waste in our oceans. With this first-of-its-kind real sector blue loan, the IFC continues to advance the circular economy for plastics in Asia, and shows that multi-stakeholder co-operation along the plastic value chain and the application of innovative financing can lead to impactful interventions to address plastic waste. We hope that our recent blue loan to IVL and our continuing work on blue financing guidelines and standards, will compel other private sector players to invest in this nascent space.

Rana Karadsheh

Director of Manufacturing, Agribusiness, and Services for Asia Pacific
International Finance Corporation (IFC)

Natura Sets an Example by Issuing the First Latin American Sustainability-Linked Bond (SLB) to Target Plastic Reduction

Summary: In 2020, amidst then-record global issuance of green, social, sustainable and sustainability-linked (GSSS) bonds, several corporations – Coca-Cola FEMSA and PepsiCo among them – issued their inaugural green bonds.⁵ In both instances, the sustainability targets governing the application of their green bond proceeds included increased use of recycled plastic in their packaging. Corporations, including Natura Cosméticos S.A., around the world would soon follow suit. By the following year, total global issuance of GSSS bonds rose almost 70%, breaching the \$1 trillion mark for the first time. While green bonds once again represented the lion's share of issuance, sustainability-linked bond (SLB) issuance grew ten-fold to \$118.8 billion.⁶

The International Capital Market Association (ICMA) defines an SLB as “any type of bond instrument for which the financial and/or structural characteristics can vary, depending on whether the issuer achieves predefined Sustainability/ESG objectives.”⁷ They are forward-looking, performance-specific instruments, and the proceeds can be applied to an issuer's overall corporate sustainability strategy. Unlike green bonds, SLB proceeds can be used for general corporate purposes. This inherent flexibility opens the market to a more diverse set of issuers, who may lack the asset-intensive base necessary to support “use-of-proceeds” structures, including upstream and downstream plastic value chain corporate actors.

Among SLBs issued by Latin American corporations, the two most common sustainability/ESG objectives have been reductions in GHG emissions and water consumption. However, the issuance by Natura Cosméticos S.A. (Natura) – a wholly-owned subsidiary of Natura &Co Holding S.A., the Brazilian multinational cosmetics firm – of a \$1 billion SLB in May 2021, mirrored those of the beverage

company's green bonds by including increased use of post-consumer recycled (PCR) plastic in its product packaging, in addition to reducing greenhouse gas (GHG) emissions, among its sustainability targets. As the first Latin American SLB issuance to target virgin plastic reduction, it set a precedent for other regions.

Natura's SLB means the company will face financial consequences if it fails to meet its ESG targets. Similar SLBs issued by Latin American corporations have been structured to result in an increase in the interest rate paid by the issuer to the bondholder – a “step-up” – if the issuer fails to achieve its sustainability targets by a set date. In Natura's case, that step-up is 0.65% if it fails to meet any of its ESG targets: a relative 13% reduction in GHG emissions and an increase in PCR use of 25% (from 9% in 2019), by 2026. Morgan Stanley acted as a joint bookrunner to the Natura issuance, further contributing to the firm's Plastic Waste Resolution, a commitment to prevent, reduce, and remove 50 million tonnes of plastic waste from entering rivers, oceans, landscapes, and landfills by 2030.⁸



Natura's sustainability-linked bond issuance offers an example of the financing opportunity in plastics for emerging markets. Morgan Stanley's partnership with Natura marks another milestone in our Plastic Waste Resolution, a commitment to prevent, reduce, and remove 50 million metric tons of plastic waste from entering rivers, oceans, landscapes, and landfills by 2030.

Matthew Slovik
Head of Global Sustainable Finance,
Morgan Stanley



Replicability Beyond Latin America

The flexibility of SLBs – and the example of their built-in incentives in Latin America for issuers to meet their ESG targets – could provide a roadmap for increased issuance in other emerging markets, where accountability and transparency are often lacking, and public sector financing is insufficient to meet SDG goals and Paris Agreement targets (in addition to forthcoming targets resulting from a legally binding instrument on plastic pollution), absent private capital flows from international capital markets.

In Southeast Asia, a region that has long suffered from the plastic pollution crisis, more examples could emerge in the coming years.

In Thailand, for instance, the issuance of a Thai baht-denominated SLB by Indorama Ventures Public Limited Company (IVL) in November 2021, continued a run of innovative sustainability-focused financial instrument offerings by the Thailand-listed, global intermediate petrochemicals producer. IVL's three-tranche, \$300 million SLB was about three times oversubscribed at its peak, and focused on institutions and high-

net-worth investors. The bond's primary goals were three-fold: a 10% reduction in GHG emissions by 2025 (from a 2020 base), increasing recycled PET bale input to 750,000 tonnes per year by 2025, and achieving 25% renewable electricity consumption by 2030. IVL's example illustrates the potential for issuance that broadens and deepens domestic capital markets in developing economies.

In Indonesia, in order for the country to deliver on its commitment to reduce ocean plastic leakage by 70% from 2017-2025 and run an effective waste-management and recycling system, it must attract capital investment of \$5.1 billion, and support an operational funding budget of \$1.1 billion in 2025.⁹ While the country has not yet seen a plastics-focused SLB, it may come in time. Through the National Plastic Action Partnership (NPAP), public- and private-sector stakeholders have established a multi-faceted set of strategies to address plastic pollution. Such cross-sectoral alignment creates further opportunity for economies in the region to utilize SLBs to reduce plastic pollution and address the significant financing gap.



Natura & Co. reached a significant milestone in its long-standing sustainability efforts with the successful raising of \$1 billion in bonds in 2021. The bonds, linked to sustainability targets, committed Natura to two environmental performance indicators by 2026: reducing relative greenhouse gas emissions and increasing the use of post-consumer recycled plastic packaging. In addition to addressing the climate challenge and advancing plastics circularity, the bond issuance is the largest ever in the Latin American market.

Marcelo Behar
VP Sustainability & Group Affairs,
Natura & Co.

Case Study 4:

Reuse Business Models Gain Traction with Investors and Consumers

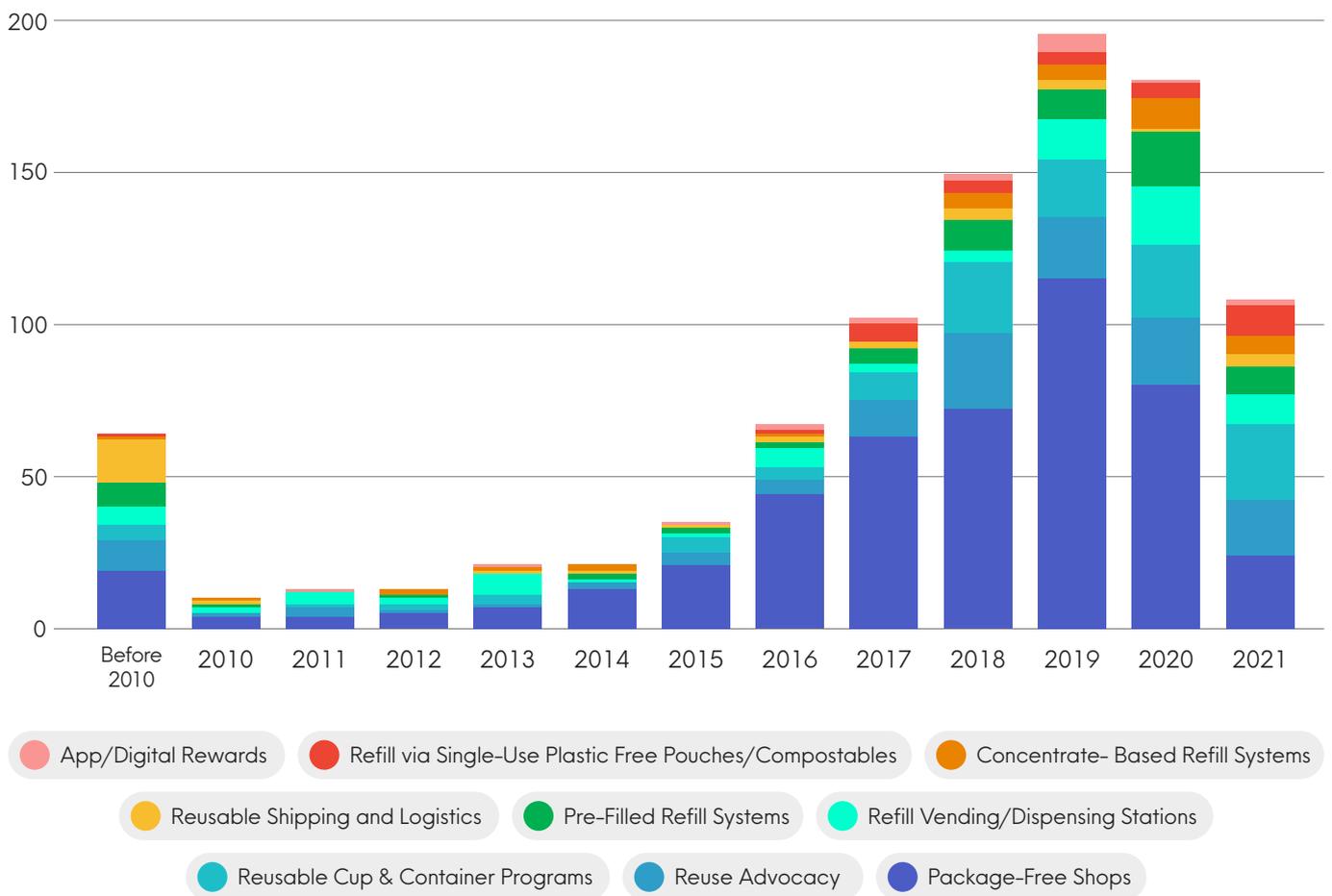
Summary: The launch of reuse business models globally has accelerated since 2015, as public awareness of the global plastic pollution crisis has grown. Driven by anticipated change in consumer preferences – and in some markets, regulation mandating reduction in single-use plastics – startups and more mature models have been able to access financing in North America and in Europe. In emerging markets, startup and early growth-stage reuse businesses are also beginning to proliferate despite an obvious financing gap, which supportive policies might help ameliorate.

Reuse and refill (hereafter “reuse”) refer to business models in which the packaging or product is designed to be used multiple times during its lifecycle. According to the Ellen MacArthur Foundation, replacing just 20% of single-use plastic packaging globally with reusable alternatives offers an opportunity worth approximately \$10 billion. Yet, among the signatories to the foundation’s Global Commitment, less than 2% of their aggregate packaging is reusable, and more than half report zero reusable packaging.

As public awareness of the plastic pollution crisis has grown and policy has accelerated, so have the number of novel reuse solutions (Figure 2), despite a more recent deceleration attributable to the impact of the Covid-19 pandemic in 2020-21. Most of these models were launched in North America, followed by various countries in Europe, with package-free shops dominating the adopted business model.



Figure 2: Reuse Solutions by Launch Year



Source: Reuselandscapes.org; solutions primarily from North America and Europe

Total funding raised for these solutions – in the United States, Canada and Europe, between 2015 and 2021 – is estimated at over \$1 billion, with almost 70% of investment in concentrate-based refill systems. Business-to-business reusable shipping and logistics solutions are among the most mature and established business models. At present, investment in such for-profit businesses tends to come from traditional venture capital and private equity firms.

Many business-to-consumer models are still in pilot mode or early growth stage. With current market volatility, these models are more vulnerable. Investors stress the need for sound business fundamentals, as well as the continued development of policies and incentives, to ensure that the best models can further mature and flourish.

The sector’s incipient nature notwithstanding, consumer convenience and behavioral change are key elements in any reuse business model’s ability to attract investment. In emerging economies and developing nations, progressive policies that support circular business models and encourage altered consumer behavior could facilitate greater investor interest.

In Europe, for example, plastics regulation that reinforces changing consumer preferences has encouraged new business model development. In mid-2019, in furtherance of the EU’s Plastics Strategy, the Directive on Single-Use Plastics was implemented, banning certain single-use plastics for which alternatives are available. In 2020, France – where a McKinsey survey revealed 79% of consumers are very concerned about the impact of waste

> \$1B

Total funding raised for reuse solutions in the United States, Canada and Europe is estimated at over \$1 billion.



PepsiCo's acquisition of SodaStream is a key part of PepsiCo's pep+ (PepsiCo Positive) transformation, providing a Positive Choice for consumers looking to reduce packaging and personalize their in-home beverages. From breakthrough innovations to beverage dispensing technologies, PepsiCo is finding new ways to reach consumers beyond the bottle.

Lauren Cotter
Head of Global Sustainable
Packaging, PepsiCo

on global warming – passed an anti-waste law mandating the end of single-use plastic packaging by 2040, with an accelerated ban on certain single-use items most likely to end up in the ocean, pursuant to the EU's Directive.

The law's mandate that restaurants switch to reusable food containers by January 2023 has been a boon for **Pyxo**, a Paris-based startup founded in 2018, which began by working with global catering giant Sodexo to replace plastic cups and make other catering items more reusable. Having raised \$6.8 million from French venture firms and family offices in November 2021, the company is expanding its model among restaurants; trackable by QR code, the containers can be used on the premises and by takeaway customers, who are incentivized to return them to the restaurant, or a drop-off point locatable via an app.

Similarly, Cologne-based startup **Vytal** offers polypropylene bowls that can be reused up to 200 times, saving up to 30kg CO₂ versus single-use containers over their lifecycle. Having established the app-based company in late 2019 to target restaurants, canteens, supermarkets, and food delivery services, Vytal's founders initially relied on their own funds and state and national government grant programs to support operations, before conducting a \$2.4 million seed round in February 2021, comprising German investors. A \$10 million Series A round followed in March 2022, financed by two European early-stage venture capital firms. Currently operating in Germany, Austria, and France, Vytal will use the new capital to expand into the UK and Holland.

In the US, rising consumer awareness of plastic waste and demand for sustainable products and packaging underpins many business models in the absence of federal regulation. One prime example is **Grove Collaborative**, a predominantly digital platform-based retailer of plastic-free and plastic-reducing consumer products.

In December 2021, the company went public via a special purpose acquisition company (SPAC), which valued the company at \$1.5 billion.

Meanwhile, PepsiCo's desire to find new ways to reach consumers beyond their standard beverage bottles spurred its \$3.2 billion purchase of home-carbonation machine manufacturer SodaStream in August 2018, which underscored growing consumer interest in alternatives to single-use beverage containers.

While these early successes have taken root largely in developed markets, emerging economies are following suit. Founded in 2012, **Algramo** represents the antithesis of business models migrating from developed to developing economies. Initially, the company pursued a model facilitating reuse of household containers that used tricycles fitted with dispensers to sell non-perishables like rice and laundry detergent to low-income families in Chile. It then established vending machine dispensers – with reusable containers that enable consumers to buy exactly the amount they want – in retail outlets in poorer areas of Santiago. Having raised over \$11 million in aggregate over two funding rounds in 2019 and 2021 from US, Mexican, and European investment funds, Algramo is now expanding its reuse model, using radio-frequency identification (RFID) tagged containers in the US, UK, Mexico, and Indonesia.

Thanks to ongoing reuse advocacy by civil society groups and the expansion of government-sponsored supportive regulatory action, reuse solutions in emerging markets are growing. Nonetheless, at least in the near-term, impact-first investors, governments, and donor agencies will likely continue to drive capital provision, as entrepreneurs experiment with business models and regulations evolve. The forthcoming legally binding instrument on plastic pollution may further create an impetus for legislation that enables growth in reuse.

11M

Having raised over \$11 million in aggregate over two funding rounds in 2019 and 2021 from US, Mexican, and European investment funds, Algramo is now expanding its reuse model.



Recykal's Technology-Based Waste Management Solution Supports India's Implementation of New EPR Policy for Plastic

Summary: The Modi government's Swachh Bharat (Clean India) mission helped to catalyze Recykal's solution to bring transparency and traceability to India's plastic waste supply chain through a digital platform. The waste management startup was able to attract funding of \$26 million from domestic and international investors in just three years. By encouraging the migration of plastic waste transactions to a digital marketplace, Recykal's model also promises greater standardization and reliability of associated data, bolstering the investment case for allocating capital to the sector.

In 2016, the opaque and fragmented nature of India's waste management sector struck serial entrepreneur Abhay Deshpande as ripe for disruption by a digital platform-based solution. The following year, together with other co-founders, he established Recykal in Hyderabad, initially adopting a business-to-consumer (B2C) model. It soon became clear that the firm's mobile app – which allowed households to schedule waste collection by informal sector workers – was neither cost-effective nor capable of aggregating sufficient waste material to meet processors' daily requirements. The Recykal team then reimagined the platform as a business-to-business (B2B) model, capable of connecting waste generators (businesses and households) to waste collectors and traders (including the informal sector) as well as recyclers, thus enabling more efficient aggregation of plastic waste at scale.

Recykal's pivot was particularly serendipitous: the Modi government's implementation of an extended producer responsibility (EPR) framework for plastic, in full effect as of 2022, created a related compliance market opportunity that prompted the establishment of a series of would-be service providers, seeking to help brands and manufacturers comply with their new recycling obligations. The national policy helped the company raise \$2 million in pre-Series A financing from India-based investors in June 2019, who were joined in December 2019 by Circulate Capital, the Singapore-based investment firm, which invested an undisclosed amount through its Ocean Fund.

Recykal developed three principal offerings: an online platform-based marketplace connecting plastic waste aggregators and recyclers; a cloud-based platform enabling brands and producers to meet their plastic recovery obligations under the EPR regime; and a service that digitizes the operations of dry waste collection centers, offering greater transparency and operating efficiencies. Recykal's business model addresses the highly fragmented nature of India's plastic recycling supply chain, as well as its inherent absence of transparency and traceability, by creating a digitized record of the waste material's journey through it.

In 2020–2021, Recykal's growth was rooted in its EPR business, helping companies comply with the regulations. However, the team also saw the potential for a more comprehensive offering with sustainability at its core. To facilitate the broadening of its platform, Recykal undertook a new equity funding round in January 2022. Led by an investment fund managed by Morgan Stanley Infrastructure Partners, the company raised \$22 million, with several existing investors also participating.

Recykal's use of technology to disrupt a hidebound sector was central to Morgan Stanley's decision to invest: the characteristics of India's waste management industry have remained essentially the same for the last 50 years, with little concerted effort by manufacturers and consumers to address their growing plastic waste footprint through innovation. Beyond anticipated financial returns, several



Recykal is driving efficiency and circularity in India's complex waste management sector through its technology-led sustainability solutions that can deliver impact at scale. Morgan Stanley India Infrastructure is excited to support Recykal in its mission to produce better outcomes for every participant across the waste eco-system.

Raja Parthasarathy
Co-Head of Morgan Stanley
India Infrastructure



environmental and social elements of Recykal's business were attractive to Morgan Stanley's investment team – notably the company's efforts to extend ethical business practices through the waste material supply chain, with particular emphasis on the dignity of labor for informal sector workers.

As one of the largest funding rounds in India's waste management sector in recent years, Recykal's latest round has reportedly drawn inquiries from a broad range of investors since closing. While India-focused investors hope the transaction presages additional capital flows into the sector, deals are likely to be in the \$1-5 million range, as participants migrate from informal to more formal operations, with concomitantly greater governance standards. Some investors may draw

an analogy to the development of India's renewable energy market in the mid-2000s, which began with limited capital flows but then benefited from national government policy interventions that removed hurdles to capital allocation and facilitated the requisite enabling mechanisms, such as bankable off-take agreements.

By the end of September 2022, Recykal had channeled over 200,000 metric tons of plastic waste onto its EPR and marketplace platforms, and worked with over 100 brands, all of India's authorized recyclers, and more than 65 municipalities. Looking ahead, Recykal anticipates preventing the leakage of more than 1.7 million tonnes of plastic into the environment and preventing emissions of 2.4 million tonnes of CO_{2e} by 2030.

1.7M

Recykal anticipates preventing the leakage of more than 1.7 million tonnes of plastic into the environment



MGA has grown from strength to strength over the past three years. As an impact investor focused on de-risking scalable solutions, we are excited to continue on this journey with MGA, making great strides not only building East Africa's first large-scale circular plastics supply chain, but also improving the lives of society's most marginalized people.

Lily Steele

Investment Director, Global Innovation Fund

Case Study 6:

Impact-Focused Investors Play a Key Role in the Expansion of Mr. Green Africa's Inclusive Recycling Model

Summary: Long-term, social impact-focused investors supported and sustained Mr. Green Africa (MGA), a start-up plastics collection and recycling company in East Africa, in its early days. More recently, a diverse group of impact and plastics circularity-minded entities have invested to increase the company's capacity for producing higher-quality recycled plastic pellets, helping to meet the demand created by consumers goods manufacturers' voluntary commitment to minimum recycled content in their packaging. Similarly, the promulgation of Extended Producer Responsibility (EPR) regimes is expected to support prospective regional expansion and require additional capital raisings, thus providing an opportunity for more traditional commercial investors to fund the company's future growth.

Mr. Green Africa (MGA) is a Kenya-based collector and processor of plastic waste into recycled material for manufacturing post-consumer recyclate (PCR), which is used in packaging of fast-moving consumer goods (FMCGs). By utilizing app-based technology and guided by fair trade principles, the company provides informal sector workers – typically highly marginalized waste pickers who earn less than \$5 a day – with a better, more consistent income that captures a greater share of collected plastics' market value, while bringing traceability and transparency to the plastic waste value chain.

Established in Nairobi in 2014, MGA was entirely self-funded until 2016, when it attracted some angel investment. In mid-2019, the company closed a Series A equity round to finance the expansion of its processing capacity and the opening of additional plastic buy-back locations. The capital raised came from two similarly aligned, social impact-focused funds: \$1 million from the Global Innovation Fund (GIF), a UK-based nonprofit, impact-first investment firm, which invested through its Unilever-sponsored Advance Fund; and an undisclosed amount from DOB Equity (DOB), a Dutch evergreen fund investing in East Africa. GIF and DOB also provided financing by way of a concessionary loan.

In 2020, the onset of the Covid-19 pandemic exacerbated an already difficult funding landscape for low-tech platform business models in Africa. Against that background, GIF – along with existing investor DOB and others – extended a bridge loan to MGA structured as a convertible note. The loan provided additional room for the company to prepare for its Series B

fundraising round to finance additional production capacity and the processing of plastic into food-grade standard pellets, which closed in December 2021 at an undisclosed amount.

The participants in that round reflected a diverse grouping, including the original Series A funders (GIF and DOB) and other impact investors, as well as more plastics circularity-focused entities. Among the latter were Dow, the US-based material sciences company, and the Minderoo Foundation, which has actively engaged in creating better data and transparency around the plastic pollution challenge. With the support of its investors, Mr. Green Africa plans to enable approximately 90,000 tonnes of plastic waste to be recovered and recycled into new packaging applications over four years and expand its operations in Kenya and other countries in Africa – further extending its recycling capabilities across the continent.

Among the existing metrics MGA tracks is the quantity of plastic waste collected and recycled, and the number of active waste pickers benefitting from it. At scale, the investment is expected to create approximately 200 direct jobs and impact the lives of 5,000 waste pickers.

Leveraging the ongoing emergence of EPR policies in emerging economies, and the commitment of FMCG manufacturers to increase recycled material use in their packaging, MGA plans to expand into Southern and Western Africa. This move will necessitate additional financing – enabling more commercial investors, who have previously shown interest in the company, to facilitate its future growth.



With the support of its investors, Mr. Green Africa plans to enable approximately 90,000 tonnes of plastic waste to be recovered and recycled into new packaging applications



Case Study 7:

An Innovative Recycling Startup in Indonesia Proves Resilient with Support of Early-Stage Blended Finance

Summary: Small and medium-sized enterprises (SMEs) – which require a combination of de-risked financing and technical assistance to scale – can offer significant opportunities for impact. Tridi Oasis, a promising Indonesian recycling startup, benefitted from the support of a circular plastics-focused blended finance vehicle and maintained operations through the Covid-19 pandemic. Ultimately, the company was able to attract an experienced strategic partner and pursue further expansion. This growth follows the emergence of minimum recycled content policies in Europe and elsewhere, and helps supply the burgeoning global demand for recycled plastics.

Tridi Oasis was founded in 2016 by two women entrepreneurs – neither of whom had prior experience in waste management or recycling – as a processor of post-consumer PET bottles into flakes, initially for the domestic recycling market in Indonesia before entering the export market in 2017. Beyond the founders' start-up funds, seed capital was provided by a local venture firm and a Java-based non-profit.

From a manufacturing facility located on the outskirts of Jakarta, the company sourced the bulk of its

feedstock from waste pickers and collectors in and around Indonesia's capital, with whom it developed strong links. By 2019, Tridi Oasis had successfully expanded its capacity to 1,000 metric tonnes per year and began to sell its flakes internationally. However, it needed additional capital to improve flake quality and access the higher-priced European export market, where the EU Directive on single-use plastics – which requires 25% recycled content in PET beverage bottles from 2025 (and 30% by 2030) – underpinned increasing demand.



Circulate Capital's partnership with Tridi Oasis is marked by two significant milestones: our first investment via our Ocean Fund and our first exit. Several factors informed our investment in the company: a robust business model specializing in recycling PET bottles; a vision grounded in innovation and quality to support local and global markets; and, a female-led organization focused on creating more sustainable jobs in the recycling and waste management ecosystem in Indonesia. Tridi Oasis' commitment to environmental and social impact mirrored our own mission, and we are excited to follow the company's ambitious growth plans.

Rob Kaplan
Founder & CEO, Circulate Capital

11K

By the close of 2021, Tridi Oasis had improved its cash flows and increased productivity, targeting an increase in capacity to 11,000 tonnes annually by 2022.

While Tridi Oasis was fielding investment offers from domestic funding sources, the founders were reluctant to dilute their equity interest and potentially lose control of the company.

Coincidentally, Circulate Capital had recently raised its Ocean Fund, which invests in entities that remediate plastic pollution leakage and promote plastic circularity. Tridi Oasis' business model was therefore attractive, and uncommonly transparent in its management structure and feedstock sourcing. Additionally, as a 100% women-owned and managed enterprise, the company aligned well with the fund's gender-impact ambitions.

As a blended finance vehicle able to offer early-stage venture debt and equity, the Ocean Fund extended its first loan to Tridi Oasis in early 2020, to expand and upgrade its flake production capacity. The loan benefited from a 50% credit guarantee provided by the U.S. International Development Finance Corporation (DFC), which partially de-risked the fund's investment while allowing the founders to maintain their existing equity.

The onset of the Covid-19 pandemic only a few months post-close negatively impacted Tridi Oasis' operations almost immediately. With the company's planned move to a new location and the concomitant commissioning of its second processing line already delayed, the imposition of lockdowns markedly diminished feedstock supplies. Even when plastic waste pickers and collectors returned to the marketplace, competition for the limited feedstock was intense, while a shortage-induced use of PVC instead of PET for some packaging led to significantly increased contamination of PET feedstock. Confronted by these unprecedented adversities, Tridi Oasis soon found itself operating in survival mode.

While the higher-risk environment may have precluded further investment by

other debt providers, Circulate Capital was able to factor the DFC's credit guarantee – along with its hands-on management approach to investee companies – into its assessment of Tridi Oasis' position. Still confident in the company's potential, Circulate Capital extended additional loan capital in early 2021.

The second loan funded the company's purchase of automated sorting and processing equipment that reduced contamination by non-PET plastics. Working capital enabled the company to weather unanticipated delays in export shipments, resulting from a pandemic-induced shortage of shipping containers. Circulate Capital also provided technical assistance through a financial consultant, who implemented more rigorous cash management and reporting systems.

By the close of 2021, Tridi Oasis had improved its cash flows and increased productivity, targeting an increase in capacity to 11,000 tonnes annually by 2022. It also sought to further improve its product marketing through initiatives including qualifying its material under an ocean-bound plastics certification. The company had also begun dialogues with potential partners impressed by the breadth and strength of its relationships with informal sector actors in the Greater Jakarta area, where an estimated 90+% of PET bottles are collected for recycling.

In July 2022, those discussions culminated in the announcement of a joint venture between Tridi Oasis and ALBA Asia Plastics Recycling Limited, a leading global recycling specialist and environmental services provider. The resulting entity will establish a new food-grade rPET plant, seeking to meet burgeoning global demand for recycled plastics from food and beverage companies. The terms of the new partnership also enabled Circulate Capital's exit through the repayment of Tridi Oasis' outstanding debts.

Indonesia's Green Finance Innovations Pave the Way for Waste Management Infrastructure Investment

Summary: Government financing plays a critical role in upscaling plastic waste solutions: By investing in waste management infrastructure, national governments signal to the market that they recognize the breadth and urgency of the plastics problem. Because governments, particularly in emerging markets, often face multiple financial obligations, innovative approaches to raising funds in debt capital markets are essential – an arena in which the Government of Indonesia leads the way. This case study highlights the examples of green sukuk (bond structures compliant with Sharia, or Islamic religious law), green bonds, and Sustainable Development Goals (SDG) bonds that raise capital for infrastructure, including waste management solutions, in Indonesia, and offer a model for further development of capital markets in-country and beyond.

Indonesia has committed to action on plastics via the National Plastic Action Partnership (NPAP) and coordinated policy initiatives. Businesses, including plastics producers and recyclers, have noted this momentum and are taking a range of voluntary actions in support of these policies. At the same time, the government has developed and deepened the market for climate and SDG-related debt instruments, both domestically and internationally, by conducting a series of strategic issuances over the last six years. These actions may pave the way for more specific plastic waste remediation and associated GHG reduction issuances by national or subnational entities, as well as by corporates in the international and domestic debt (conventional or Islamic) capital markets.

Green Sukuk offerings

In 2015, Indonesia's Ministry of Finance, Bank Indonesia, and the Indonesian Financial Services Authority established the Coordination Forum on Financial Market Development. This body subsequently published its National Strategy for Financial Market Development 2018–2024, a roadmap for the development of deep, liquid, efficient, inclusive, and prudent financial markets in Indonesia. The issuance of sukuk and thematic bonds, including green bonds, were core elements of the strategy to develop the country's government bond market.

The Government of Indonesia subsequently developed a Green Bond and Green Sukuk Framework, based on the Green Bond Principles, to facilitate issuances. A second party opinion on the framework was provided by CICERO, which rated it "Medium Green". To address the funding gap between the country's resources and its climate change-related investment needs, Indonesia embarked upon a series of international and domestic green sukuk issuances, which began in 2018 with the world's first sovereign green sukuk issuance, totalling \$1.25 billion and listed on both NASDAQ Dubai and the Singapore Exchange. Oversubscribed, it sought to broaden the investor base, with 32% of the offering placed with Islamic investors, including Middle East-based Sovereign Wealth Funds, and just under 30% allocated to green investors. Indonesia has since conducted annual issuances of green sukuk globally, establishing the country as the world's most prolific green sukuk issuer.

In June 2021, Indonesia closed a \$3 billion global sukuk offering, including a \$750 million green sukuk tranche. The country has also sought to develop its domestic debt and Islamic capital market by conducting three rupiah-denominated retail offerings of green sukuk, in 2019, 2020, and 2021, totaling approximately \$814 million. To date, issuance under the Green Framework totals approximately \$4.3 billion.



As the world's largest archipelago, Indonesia is acutely aware of the need to combat marine plastic pollution. The government is committed to systematic action on plastic through the National Plastic Action Partnership (NPAP), and an integrated approach across national and local level policies. Through innovative financing instruments, we aim to foster greater private sector involvement in meeting this challenge.

Rofi Alhanif

Director of Waste and Wastewater Management, Coordinating Ministry of Maritime Affairs and Investment, Indonesia

While the Green Framework does not specifically reference plastic waste remediation within its list of eligible green projects, “Waste to Energy and Waste Management” is included as an eligible category. In its latest Green Sukuk: Allocation and Impact Report from May 2021, the Indonesian Ministry of Finance states that 7%, 9%, and 11% of green sukuk proceeds were allocated to waste to energy and waste management projects in 2018, 2019, and 2020, respectively. Together, these projects, which primarily focus on developing landfill and final disposal sites, are expected to benefit more than two million households due to the improved waste management.¹⁰

SDG bond offering

In September 2021, building on the success of the green sukuk offerings, Indonesia became the first Southeast Asian country to issue an SDG bond in the global debt capital market. The \$584 million, 12-year

bond was issued under Indonesia’s recently published SDGs Government Securities Framework for the issuance of sukuk and green, blue, social, and sustainability bonds. The SDGs Framework received a second-party opinion from CICERO and the International Institute for Sustainable Development, which rated it “Good–Medium Green.” As with the Green Framework, “Waste to Energy and Waste Management” is an eligible category for the use of funds raised under the SDG Framework. In implementing its Roadmap of SDGs Indonesia,¹¹ the government indicated that its first issuance under the SDGs Framework will finance “purely social projects, with a focus on healthcare, improved ICT infrastructure, and education.” Subsequent issuances will likely follow the template set by the green sukuk offerings and include waste management projects.

These climate change and SDG-related issuances run parallel with

other creative initiatives by the Government of Indonesia in the debt capital markets – such as using Instagram, Twitter, and online fintech platforms to market two-year ‘James Bonds’ – so-called because of their “007” issuance series number – to Indonesian millennials (who were also targeted in the green sukuk issuances) in a 2019 domestic retail offering. Another – “pandemic bond” for the international markets issued in April 2020 that included a \$1 billion, 50-year tranche – raised \$4.3 billion, and marked the first time a 50-year dollar deal had been issued in Asia, aside from rolling hybrid transactions.

While innovative financial instruments are still in their early stages, with each issuance the Indonesian government is fostering market familiarity and acceptance, engaging more participants, and furthering the government’s environmental ambitions, including on plastic pollution.



Credit Suisse, The Nature Conservancy, and U.S. International Development Finance Corporation Partner with the Government of Belize on Blue Bond for Conservation

Summary: In emerging markets, closing significant infrastructure gaps with appropriate financing can be a challenge. Private investors are often deterred by political and institutional risks and government budgets are strained across many priorities – even more so since the COVID-19 pandemic. This case study describes a highly innovative financing approach and details the critical role of development finance institutions (DFIs) in mobilizing financing and action for environmental objectives in Belize. This novel approach could blaze a trail for financing plastic waste solutions in particular, as well as other environmental or social development priorities in emerging markets.

Restructuring Belize's debt as a blue bond

A DFI's provision of political risk insurance to a loan extended to the Government of Belize – then confronting a severe economic, fiscal, and debt crisis – facilitated the placement of investment grade pass-through notes¹² to private sector investors. This enabled the government to redeem \$546 million in outstanding sovereign debt at a 45% discount, while simultaneously doubling the country's marine protected areas and establishing a fund for marine conservation.

After four debt restructurings in fifteen years, Belize's already acute fiscal position was worsened by the COVID-19 pandemic, which had a devastating impact on crucial tourist revenues.

This prompted the government to place a moratorium on debt service and explore restructuring options for its debts. Subsequently, together with Credit Suisse and The Nature Conservancy (TNC), the government devised a debt conversion for marine conservation financial structure under the auspices of TNC's Blue Bond for Conservation program.

The proceeds of a \$364 million issuance of pass-through notes (the blue bond) by a TNC-controlled offshore vehicle was extended as a blue loan to the Belize government, enabling it to repurchase the country's only international bond (the "Superbond") at a 45% discount to its face value. With the resulting fiscal savings, the government announced a variety of marine conservation-related initiatives, including a legally

enforceable marine spatial plan designed to virtually double the country's marine protected area from 16% of its ocean to 30% by 2026. The government also embarked on a 20-year project to establish and finance an independently controlled conservation fund dedicated to protecting Belize's marine ecosystem.

The political risk insurance provided by the DFC was critical to sourcing the private capital that underpins the financing structure. The DFC's participation enabled Moody's to assign an investment grade rating (Aa2 stable) to the blue bond, at a time when it rated Belize's national debt as speculative and a high credit risk (Caa3 stable). As Moody's noted in its rating action, "The Aa2 rating on the blue bonds primarily reflects DFC's insurance policy to insulate blue bond holders from a default of Belize on the underlying blue loan." Other blended finance instruments might similarly strengthen the government's ability to access affordable financing as part of its conservation and economic recovery efforts.

With the government committed to developing management plans for at least two watersheds, the blue bond could also help remediate plastic leakage into Belize's waterways. In the near-term, the transaction's contribution to developing blue economy financial instruments, increasing future issuances (which may support solid waste management or circular economy projects), and demonstrating the potential of blended finance programs and instruments – particularly those supported by DFIs – are arguably its greatest impacts.



Credit Suisse is proud to have supported The Nature Conservancy and Belize by acting as the sole structurer of the first Blue Bond for Conservation. We recognize the critical role financial institutions play in channelling much-needed capital towards ocean conservation, as well as further developing and deepening this important market.

Paul Bajer
Global Head of Credit Structuring,
Credit Suisse

30%

The government of Belize has committed to undertaking a legally enforceable marine spatial plan with an aim to nearly double the country's marine protected area from 16% of its ocean to 30% by 2026.



The Nature Conservancy is delighted to have participated in this transaction, which furthered our Blue Bond for Conservation program. We developed this innovative financial model to help coastal and island nations refinance national debt to unlock funding for crucial, long-term financing, thus aiding governments deliver on conservation goals and support the well-being of coastal communities.

Melissa Garvey

Global Director, Ocean Protection,
The Nature Conservancy (TNC)

SUNREF: Learning from Blended Finance Solutions in Renewable Energy

Summary: The Sustainable Use of Natural Resources and Energy Finance (SUNREF) program, created by the Agence Française de Développement (AFD) and implemented in Nigeria by Access Bank and United Bank for Africa (UBA), with technical assistance provided by the Manufacturers Association of Nigeria, facilitates domestic commercial bank lending to renewable energy and energy efficiency companies and projects. The program may provide a template for stimulating access to capital for SMEs and other actors in the downstream plastic recycling value chain, particularly in countries with suboptimal waste management and recycling infrastructure.

SUNREF globally

The SUNREF program is the green finance label of Agence Française de Développement (AFD), France’s bilateral development institution. Operational since 2006 and given renewed impetus by 2015’s Paris Climate Agreement, SUNREF seeks to remove financial and technical obstacles that prevent financial institutions in emerging markets from extending credit for investments that further the transition to a green economy and support the United Nations SDGs. Eligible investments can address three thematic areas: renewable energy, energy efficiency, and environmental performance (encompassing emissions reduction and environmental compliance).

Operating globally – with 80 partner banks in over 30 countries – the program is tailored at the national level, providing a combination of loans, guarantees, grants, and technical assistance to local partner banks and the companies and projects they subsequently finance (See Figure 3). Beyond facilitating access to green

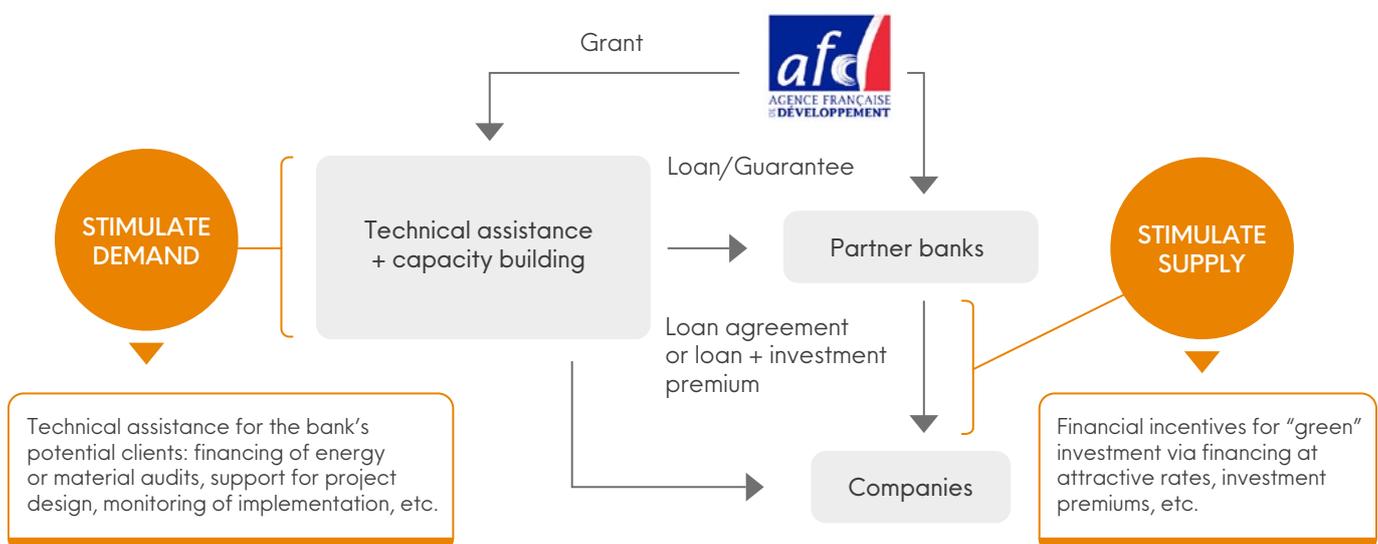
capital, the program supports related policies of host governments, and builds partner banks’ capacity to finance green investments.

SUNREF in Nigeria

SUNREF Nigeria launched in mid-2018, with a relatively mature financial market and two partner banks keen to build their green product offerings. The program comprises:

- A \$70 million-equivalent, long-term concessional credit facility provided by AFD, divided equally between Access Bank and UBA.
- A technical assistance (TA) component to identify, assess, and execute renewable energy and energy efficiency projects.
- An investment grant, which includes a provision that up to 10% of any loan meeting the program’s eligibility criteria and extended under the program can be repaid as a success fee. The EU funded the TA and investment grant components through a \$10.75 million award.

Figure 3: SUNREF program overview



Source: AFD



The Manufacturers Association of Nigeria provides technical assistance to the partner banks and their prospective clients, with Winrock International providing green energy related, capacity-building advice.

After little more than three years, the SUNREF partners have successfully disbursed the majority of their capital under the credit facility. AFD primarily attributes that solid performance to the enthusiasm of its partner banks for extending renewable energy and energy-efficiency loans, and to the green economy focus of the Nigerian government and the Central Bank of Nigeria.

Nonetheless, AFD also notes the difficulty in finding sufficiently mature and bankable projects – a challenge partly attributable to potentially onerous loan collateral requirements. Addressing such regulatory matters will form part of Transforming Financial Systems for Climate (TFSC), AFD's follow-on program currently under development.¹³ As part of that initiative, AFD is also exploring the potential to provide investment capital to green economy startups and use other financial instruments in its portfolio that may increase lending from local commercial banks.

The SUNREF program demonstrates the potential for bilateral and local financial institutions to collaboratively secure financing for environmentally beneficial infrastructure, including plastic waste collection and recycling.

A model for plastic waste management

In September 2021, the World Bank published its *Market Study for Vietnam: Plastics Circularity Opportunities and Barriers* paper, which notes that, although a green financing framework was launched the previous year by a local Vietnamese bank, a disparity exists between the financing needs of the country's SME plastic recyclers and available green finance products. Along with other regulatory changes, the World Bank recommends increasing local banks' ability to assess the bankability of plastic recycling projects, and widening the range of financial products available to plastic recycling market participants, especially SMEs. To that end, in countries confronting the snowballing challenge of plastic waste mismanagement, SUNREF may provide a useful template as a similar program focused on encouraging investment in plastic waste-remediating companies and projects.



The SUNREF program has a successful history of supporting financial institutions in developing countries to seize green finance opportunities. SUNREF's loans, investment grants, and technical assistance allow companies to achieve cost savings and become more competitive while creating positive environmental impact. SUNREF's business and operational model can potentially be scaled to tackle other sustainability challenges, such as plastic pollution, to drive the required investment and infrastructure for solutions.

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Unlocking Investment for the Plastics Circular Economy: Considerations for Policymakers

Plastic pollution is a complex problem that requires concerted action by governments, the private sector, consumers, and civil society.

This is particularly true with regard to financing, given the estimated \$1.2 trillion and significant departure from the status quo necessary to implement sustainable solutions to transition to a circular economy for plastics. While addressing this problem will require broad-based mobilization of private and public capital globally, it is also crucial to consider how to best channel this capital to those who need it most – especially to informal actors who have little access to capital of any kind.

While all sectors must contribute, governments have a special responsibility – and opportunity – to foster these solutions:

- Government policy shapes the investment environment, which can incentivize and accelerate the pace of change.
- Through official development assistance (ODA) and other initiatives, governments can contribute significant financial resources, particularly to help developing countries address the problem.
- Governments can also strategically leverage domestic policies to mobilize the private sector contributions necessary to solve the plastic pollution crisis.

Together, the World Economic Forum's Global Plastic Action Partnership and

The Circulate Initiative have curated a series of successful, potentially replicable investments that could collectively address the plastic waste challenge. These case studies highlight the roles that governments, development finance institutions (DFIs), businesses, and civil society play in emerging markets, partnering to devise concrete investment solutions that have proven successful. They also confirm that a multitude of financing options will be required, and that these solutions can also generate green jobs as part of a just transition.

The negotiations to create an international legally binding instrument to combat plastic pollution offer an unprecedented opportunity to develop new pathways that prioritize government collaboration with business and civil society to direct the resources needed to address the crisis.



These case studies highlight the roles that governments, development finance institutions (DFIs), businesses, and civil society play in emerging markets, partnering to devise concrete investment solutions that have proven successful.

Policy's Role in Shaping the Investment Environment to Incentivize and Accelerate Change

Policymakers have a wide range of tools at their disposal to shape the enabling environment for investment. One such tool, extended producer responsibility (EPR) – which makes companies responsible for the post-consumer treatment and disposal of their products – sends a powerful signal that can move markets, as well as provide a reliable and transparent capital source. For example, the Government of India's adoption of EPR, in conjunction with its Swachh Bharat (Clean India) initiative, was a "game changer" for Recykal, a Hyderabad start-up focused on improving transparency through digital solutions that help companies with EPR compliance. Recykal raised its first \$2 million in financing in 2019 with investment from Circulate Capital through its Ocean Fund, followed by an additional \$22 million, in a round led by Morgan Stanley in 2022. By leveraging this capital, Recykal projects that it will help prevent more than 1.7 million tons of plastic leakage by 2030, while also eliminating 2.4 million tons of CO₂ emissions.

[Recykal Case Study](#)



Mr. Green Africa, a Nairobi-based plastic collector and processor that operates under fair trade principles with 6,500 informal sector waste collectors, began as a self-funded start-up. The firm eventually secured seed investments from non-profit funders, impact-focused investment firms, and recently closed further financing rounds from new and existing investors. The company is eyeing expansion to Southern and Western Africa to meet new demand driven by increasing EPR adoption in the region.

[Mr. Green Africa Case Study](#)



Restrictions or bans on plastic can also drive change. The European Union's Directive on Single-Use Plastics, bans certain single-use plastics for which alternatives are available and mandates restaurants switch to reusable food containers by January 2023. The Directive has been a boon for Pyxo and other reusable-container start-ups, whose growth has been fueled by European early-stage venture capital and family offices.

[Reuse Case Study](#)



Tax incentives serve as an additional policy tool to drive investment. The Philippine government's offer of a six-year income tax holiday was a strong incentive for Thailand-based Indorama, the world's largest PET bottle producer, to form a recycling joint venture with Coca-Cola Beverages Philippines. The consortium is constructing a \$20 million bottle-to-bottle recycling plant in the country's Cavite Province that will process 30,000 tons (2 billion bottles) each year.

[Indorama Case Study](#)





Direct Government Investment's Role in Providing and Mobilizing Capital

The stage is also set for governments to augment existing budget spending by applying climate- and environmentally-linked sovereign wealth, bonds, and bilateral and multilateral funds to scale needed infrastructure and innovation for plastics circularity, building on learning in other sectors.

The Agence Française de Développement (AFD) hit upon a novel way to ensure its official development assistance (ODA) reaches deserving candidates in Nigeria. Its Sustainable Use of Natural Resources and Energy Finance (SUNREF) program provided a \$70 million concessionary credit line to two local banks – Access Bank and United Bank for Africa (UBA) – for lending in the targeted areas of green transition, energy efficiency, and environmental performance, and includes a technical assistance component led by the Manufacturers Association of Nigeria. The project aligns incentives, in that 10% of the program's loan repayments that meet all eligibility criteria can be retained by participating banks as a success fee. A similar approach could be used to channel investment to circular economy solutions to prevent plastic pollution.

While the majority of assistance funding is channelled through bilateral or multilateral entities from developed to developing and emerging countries, recipient countries have also demonstrated admirable creativity in raising financing. For example, the Government of Indonesia led the way in creating the market for sustainable and green sukuk (Islamic) bonds with the launch of the world's first green sukuk bond in 2018. This \$1.25 billion issuance was followed by a \$3 billion global sukuk offering that included a \$750 million green tranche. The country has since raised an additional \$814 million through three local-currency green sukuk offerings. Building on this success, Indonesia became the first Southeast Asian country to issue a global sustainability bond with a \$487 million issuance in 2021. While the proceeds are not solely earmarked to fight plastic pollution, waste management is among the approved uses. Indonesia's successes highlight how the bond market presents an option for other countries looking to raise financing. With ever-increasing attention focused on the need for broader, more innovative plastic waste, energy transition, and climate resilience solutions, governments may look to follow Indonesia's lead, while other developing nations may look to international credit markets to raise similar funding in the future.

\$70M

The SUNREF program provided a \$70 million concessionary credit line to two local banks for lending in the targeted areas of green transition, energy efficiency, and environmental performance

[SUNREF Case Study](#)



[Indonesia Bonds Case Study](#)



Leveraging Government Assistance Funds to Deploy Capital

By thinking beyond traditional ODA, governments can deploy funds in coordination with other entities to reduce risk, provide technical assistance, or create new economic opportunities.

Governments and DFIs can offer partial credit guarantees to reduce risk – which, if properly structured, can amplify impact by unlocking greater financing than would otherwise be available. The U.S. International Development Finance Corporation’s (DFC) provision of a 50% partial credit guarantee to Circulate Capital supported the extension of an additional loan to Tridi Oasis at the height of the global pandemic in 2021, when the company faced severe operating challenges.

[Tridi Oasis Case Study](#)



The provision of political risk insurance offers another promising avenue to capital. For example, the DFC’s willingness to extend political risk insurance enabled the issuance of a \$364 million blue bond on behalf of the Belize government, using a pass-through vehicle controlled by The Nature Conservancy, at a time when the country would have otherwise been unable to access capital markets due to a severe economic crisis. The proceeds were used to purchase Belize’s only outstanding international bond at a 45% discount. In return for the resulting savings in debt servicing, the government committed to expanding marine protected areas from 16% to 30% of its territorial seas, and to creating both an enforceable marine spatial plan and an independent fund to protect Belize’s marine ecosystem.

[Belize Case Study](#)



DFIs can set the example for other investors, especially in providing early funding. The International Finance Corporation (IFC) anchored a blended finance deal by providing \$13 million in 2009 to PetStar, a multi-sector alliance, to construct a PET recycling plant in Toluca, Mexico. IFC’s participation attracted an additional \$11.5 million in private financing. ECOCE, a non-profit founded by Mexico-based Coca-Cola FEMSA to focus on socially responsible collection, was also a key player in the arrangement. The plant’s initial success prompted the consortium of bottlers to invest an additional \$34 million to double the plant’s capacity in 2012. By 2018, a total of \$339 million had been invested in 16 plants, creating an overall processing capacity of 312,000 tons. As a result, the PET recycling rate in Mexico rose from 9% in 2002 to 56% in 2018. In 2020, Coca-Cola FEMSA issued a \$705 million green bond, the proceeds of which can be applied to further investment in this area, among others.

[FEMSA Case Study](#)



Policy support, such as the Philippine government tax holiday mentioned above, can pave the way for additional financial innovation and investment. For example, the IFC also partnered with fellow DFIs, the Asian Development Bank (ABD) and Deutsche Entwicklungsgesellschaft (DEG), to provide \$300 million to Indorama, with the proceeds earmarked to underpin \$1.5 billion of recycling investment in five strategic emerging markets (including the Philippines). This financing package marks the world’s first independently verified, non-sovereign blue loan. The verification process, which included environmental and social compliance audits, could serve a model for similar future deals, especially at a time when public scrutiny on perceived “greenwashing” by financial institutions and corporations is high.

[Indorama Case Study](#)



Call to Action

By launching negotiations for an international binding agreement to combat plastic pollution, governments have taken an historic step toward solving this global problem – and now have an opportunity to ensure their efforts bear fruit by supporting emerging financing solutions from all corners of the globe.

To do so, policymakers will need to:

- 1 Adopt, implement, and consistently enforce transparent, equitable, and predictable policies** (e.g., extended producer responsibility and recycled content standards), proven to create reliable funding sources and a supportive enabling environment for a circular plastics economy, while also offering incentives and assurances that encourage private investment;
- 2 Direct both bilateral and multilateral assistance funds to meet the needs of innovators, entrepreneurs, and SMEs** in both the formal and informal sectors within the plastics value chain, and;
- 3 Intentionally build policy and mechanisms that leverage official development assistance to unlock the private sector resources** needed to address the problem. Most importantly, this work – already well underway, as demonstrated by the case studies herein – can be accelerated immediately to mobilize the financing required to address the plastic pollution crisis at scale.

There is no time to waste.

The Road Ahead: Investment in the Plastics Circular Economy

With momentum building for action on plastic waste, now is the time for policymakers and investors across asset classes and regions to seize this crucial opportunity.

Forward-thinking investors are taking advantage of the current opportunities in the plastics circular economy – but attracting significant private capital and tackling the plastic waste challenge at scale requires greater transparency, a track record, and commensurate ticket sizes. To address these needs, stakeholders must focus on these key milestones on the road ahead.



1

A global legally binding instrument on plastics pollution will create an opportunity for greater transparency and investment.

EU-led policies have been globally influential, as illustrated by multiple case studies shared in the publication (Tridi Oasis, Indorama Ventures, and reuse). Similarly, an international legally binding instrument will set the stage for UN Member States to adopt and implement related policies in the coming years, representing a significant opportunity to incentivize and de-risk investment and engagement by multiple private sector actors. While the broader policy efforts advance, strategic players and financial institutions need not wait, but can instead begin to capitalize on the momentum and interest around the circular economy. Furthermore, current voluntary efforts to track and measure plastic pollution will soon be matched by mandates to increase harmonization of metrics and standardization of data and reporting, and bring transparency to the plastic waste ecosystem.

Calls to action:

- **Governments must embrace their responsibility and opportunity to address the plastic pollution crisis by committing development assistance in ways that will encourage, support, and leverage private sector financing and reporting.**
- **Plastics producers must anticipate and respond quickly to emerging policies. Through meaning investment, they can make plastics recycling and other alternative solutions core tenets of their business.**
- **While there have been several notable developments involving rPET, many more are needed globally. Mainstream financial institutions can contribute follow-on financing to enhance the infrastructure for plastics recovery across material types, including and beyond rPET.**

2

Plastics-related market development can mimic the growth of the renewable energy market in Africa and India. Circular economy investments will further support climate-related investments and net-zero transition strategies.

Investors see a parallel between the rise of renewable energy investment following climate commitments, and plastic waste management's current trajectory. Two case studies in particular – Recykal in India and SUNREF in Nigeria – offer a sign of change to come. Meanwhile, bankable offtake agreements are increasingly emerging, especially among downstream actors. As state and local government actors further implement national policy mandates, public-private coordination, such as those facilitated under National Plastic Action Partnerships (NPAPs), is critical and offers greater certainty to investors. Both public and private sector actors can learn from other climate infrastructure investment models, and adopt these practices for plastics circularity.

Calls to action:

- **Governments need to enact and enforce policies – including climate policies – that support a cohesive ecosystem for plastics circularity and further incentivize and de-risk private investment.**
- **Governments can make use of existing financial instruments, such as sustainability bonds and climate funds, to build better infrastructure for plastics waste management and recycling.**
- **Banks can leverage DFIs and other partners to de-risk deals through blended finance schemes.**

3

Impact-oriented and strategic investors that support early-stage innovations and SMEs now are preparing the pipeline for more commercial capital to play a role in scaling circular economy infrastructure in the near future.

Several brands and companies in the plastics value chain have made strategic investments in downstream and upstream solutions. In order for solutions to scale, policies are required to further de-risk and meet global capacity needs. With these assurances, more mainstream financial institutions will enter the market, as demonstrated by the multi-decade evolution of rPET recycling in Mexico.

Calls to action:

- **DFIs and impact investors can expand financing to plastic waste solutions beyond rPET.**
- **Corporations that use plastics should continue to support the ecosystem and commit to bankable offtake agreements that help unlock financing.**
- **Policymakers can address policy gaps that would help emerging business models, as seen in policies that allow PCR for food-contact grade applications, or mandate reuse/refill containers where recyclable or compostable solutions are unavailable.**

Acknowledgements

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Endnotes

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