CIRCULATE CAPITAL: MODERNISING THE PLASTIC RECYCLING VALUE CHAIN TO COMBAT POLLUTION

SCALING IMPACT IN ASIA: ACHIEVING PURPOSE AND PROFIT

Photo provided by Circulate Capital.

Centre for Impact Investing and Practices

CIIP is a non-profit centre established by Temasek Trust

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INTRODUCTION

This case study was developed in conjunction with the report "Scaling Impact in Asia: Achieving Purpose and Profit". It is part of a collection of stories that aims to illuminate and provide insights into the impact journey of investors and businesses in Asia.

The report and case studies are jointly developed by the Centre for Impact Investing and Practices (CIIP), Singapore Management University (SMU), and Accenture. In producing this study, our aim is to inspire and encourage more to make every dollar invested in Asia deliver positive, measurable impact. Through these in-depth case studies, we hope to extend the scope of existing research in Asia by providing tangible, real life examples from practitioners on the ground.

As part of our efforts to broaden the impact universe, we sought to speak with and showcase a range of organisations, from traditional impact investors and companies, to those who are not typically recognised as agents of impact. These diverse types of organisations are reflective of the broad commercial landscape within which the private sector operates, and we hope they serve as relatable examples for readers on various parts of the impact journey.

The rich and nuanced story told in the ensuing pages is the product of several deep conversations with leaders of the organisation(s) featured. We dug deep into how decisions are made, probed at dilemmas faced, dissected challenges and setbacks, and identified key actions that maximise impact. Thank you to those who participated for your time, insights, candid responses, and above all, your willingness to share about your journey, so that others may learn and be inspired.

You can find our report "Scaling Impact in Asia: Achieving Purpose and Profit" here.

Photo provided by Circulate Capital.

CIRCULATE CAPITAL

CIRCULATE CAPITAL

HEADQUARTERS

Singapore

GEOGRAPHY FOCUS

South Asia, Southeast Asia

SECTORS

Circular Economy, Waste Management

FOUNDING YEAR

2018

SIZE OF FUND

CCOF: US$112M
CCOF I-B: US$53M

MISSION

To develop a circular economy to combat plastic pollution through investments in high growth opportunities at the nexus of climate tech and plastics recycling infrastructure

Photo provided by Circulate Capital.

ADDRESSING PLASTIC POLLUTION IN ASIA

PLASTIC WASTE GENERATION AND LEAKAGE ON THE RISE

To date, over eight billion tonnes of plastic have been produced globally. While 9% has been recycled, approximately 80% sits in landfills or in the ocean, with the rest incinerated or unaccounted for.[1] According to the United Nations Environmental Programme (UNEP), without urgent action, the 11 million tonnes of plastic currently entering the ocean annually will triple by 2040.[2] This would be the equivalent of 50 kilograms of plastics entering the ocean per meter of coastline. By 2050, there could be more plastics in the ocean by weight than fish.[3]

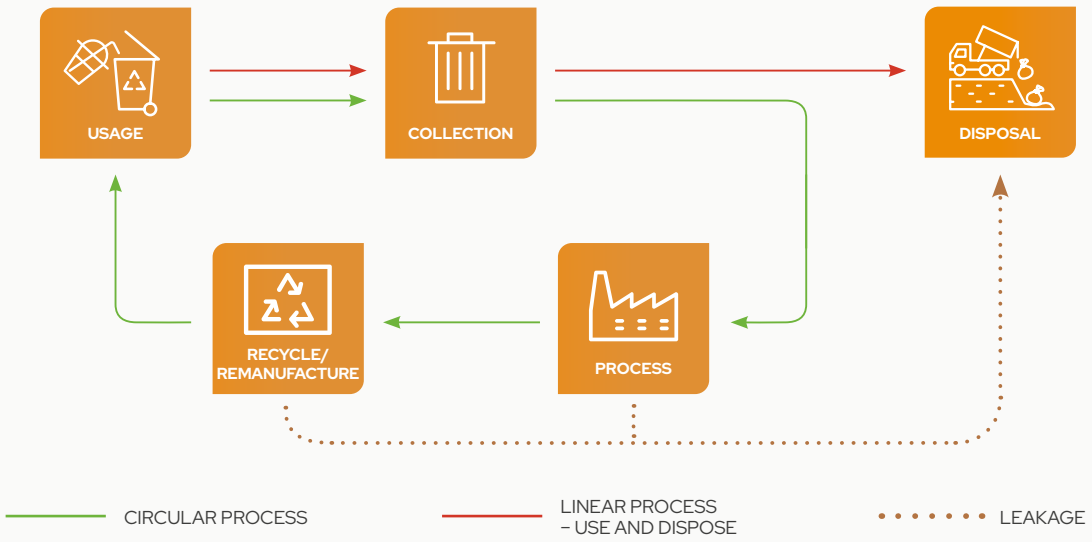
In Asia, the growth of populations and wealth as well as increased urbanisation have fuelled rising consumption of plastic products and packaging. This has led to increasing plastic waste leakage into the ocean, occurring mostly through rivers connecting the ocean to populous cities. At present, 81% of the world's ocean plastic flows through Asian rivers.[4]

In Southeast Asia, interest has grown for addressing the challenge of plastic waste. An increasing number of researchers has identified waste management infrastructure as a primary challenge to the region.[2]

NASCENT WASTE MANAGEMENT INFRASTRUCTURE

With waste generation on the rise, the infrastructure to properly manage and valorise this waste has become increasingly vital. Post collection, waste management usually follows one of two paths. After collection, plastic waste can either be disposed of – as part of a linear process – or be processed, recycled, and reused – as part of a circular process.

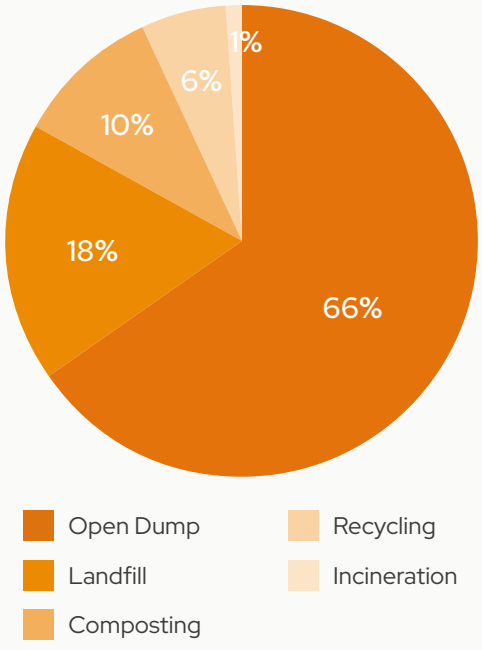
FIGURE 1: WASTE MANAGEMENT PROCESS



[1] Reuters (2018). Southeast Asian plastic recyclers hope to clean up after China ban
[2] UN Environment Programme (2021). From Pollution to Solution
[3] World Economic Forum (2016). The New Plastics Economy: Rethinking the future of plastics
[4] Our World in Data (2021). Where does the plastic in our oceans come from?

In the initial stage of waste collection, mismanagement due to poor infrastructure and a lack of consumer know-how on proper waste management protocol are core challenges. Collection is often the responsibility of local municipalities and can be the single largest line item on an administration's budget. In low-income countries, this can be 20% or higher, particularly in urban environments.[5] As a result, infrastructure and services such as trucks, bins, route design, and employees, may not be adequately funded. Municipal governments thus often rely on informal waste pickers in the form of small businesses or self-employed individuals to manually gather and transport plastic waste to drop points. It is estimated that waste pickers collected 58% of the world's post-consumer plastic waste in 2016.[6]

FIGURE 2:
LOWER-MIDDLE INCOME COUNTRIES' DISPOSAL METHODS



Following collection, waste can either be disposed of or processed. Waste disposal in the end-of-life stage faces the primary challenge of being performed in an environmentally friendly way. It is part of a linear life cycle as waste is collected and then diverted to the end of the cycle or is dumped. Adequate disposal is the almost exclusive domain of higher income nations, whereas in low- and lower-middle income nations, most waste is disposed of in open dumps. Such disposal practices have negative impacts to the environment, society, and the economy, including pollution and deleterious effects on the health of surrounding communities. Figure 2 illustrates the variety of waste disposal methods in lower-middle income countries based on a 2018 World Bank report, the majority of which leads to negative impacts.[7] Increasing recycling and remanufacturing capacity is a way to redirect a significant volume of the waste that would otherwise be disposed of in open dumps.

By contrast, waste processing, which includes sorting, cleaning, and processing into materials that can be used in recycling, is central to a circular life cycle for plastic products. It precedes plastic waste being recycled, reused, or re-manufactured but often faces the key challenge of capacity. For countries such as Malaysia, India, Indonesia, and Vietnam, this can be particularly challenging as they import plastic scrap from countries such as Japan and the United States.[8] The added strain from imported waste on domestic waste management infrastructure often exacerbates the potential for mismanagement.[9] For example, in 2021, Malaysia imported 835,000 tonnes of plastic scrap, overexerting its domestic annual processing capacity of 515,000 tonnes.[10] This left little capacity for the 2.4 million tonnes of

[5] IISD (2018). Eleven Global Corporations Pledge to Recycle All Packaging by 2025
[6] Science (2020). Evaluating scenarios toward zero plastic pollution
[7] World Bank (2018). What a waste 2.0
[8] Resource Recycling, Inc. (2022). US scrap plastic exports continue years-long decline
[9] Bai, Y., & Givens, J. (2021). Ecologically Unequal Exchange of Plastic Waste? A Longitudinal Analysis of International Trade in Plastic Waste
[10] Environmental Investigation Agency (2021). The Truth Behind Trash

plastic scrap produced domestically. As a result, an estimated 330,000 tonnes of mismanaged waste leaked into the environment.[11] Importing plastic waste has been restricted under the Basel Convention to reduce such strains, but waste processing capacity remains a challenge for low-to-middle income countries in South and Southeast Asia.

Across the waste management value chain, the underfunding of waste management infrastructure leads to inadequate waste collection and containment, widespread littering, and illegal dumping. This challenge is particularly acute in South and Southeast Asia. India is the second and Indonesia is the fifth largest plastic waste generating country by total volume globally (along with the United States, China, and Brazil in the top five); in addition, 79% and 61% of their plastic waste is mismanaged respectively.[12] Owing to each country's vast coastlines, a combination of high waste generation and mismanagement leads to significant volumes of waste from both nations ending up in the ocean.

ENVIRONMENTAL AND SOCIAL CONCERNS

Plastic waste that is improperly collected and managed presents significant potential for environmental damage. When leaked into waterways, plastic waste causes harm to ecosystems and disruption to natural habitats. On land, decomposing plastic in open dumps leaches toxins into community groundwater and soil. It also releases harmful gasses into the environment when burned.

FIGURE 3: CHALLENGES AND EFFECTS OF PLASTIC WASTE MISMANAGEMENT

COMMON CHALLENGES OF MISMANAGED PLASTIC WASTE	EFFECTS
Bioaccumulation	Accumulation of plastic in organisms, such as fish or vegetables
Leaching	Chemical films separate from plastics via contact with water and seep into water sources or soils
Ecological Disruption	Waste build-up prevents oxygen and nutrients from passing into bodies of water
Environmental Contamination	Microfibers from plastic degradation pollute soil and groundwater
Air Pollution	By-products of plastic degradation and incineration, such as methane and carbon dioxide, are released into the air

[11] Reuters (2018). Southeast Asian plastic recyclers hope to clean up after China ban
[12] Science (2020). The United States' contribution of plastic waste to land and ocean

Beyond environmental degradation, mismanaged plastic waste also leads to adverse social outcomes related to health and safety. The by-products of incineration, degradation, or fires in open dumps contribute to poor air quality. This can cause health challenges for neighbouring communities such as heart disease, aggravated respiratory ailments including asthma and emphysema, rashes, nausea or headaches, and damages to the nervous system.[13] Additionally, phthalates, the chemical compounds responsible for plastic's characteristic flexibility, have been associated with fertility issues and neonatal impacts on infants. The accumulation of toxins in the soil can also seep into local diets, such as fruits or vegetables grown near open dumps, further harming the health of local communities.

Although communal dumps can provide a source of income for waste pickers, waste picking offers poor compensation, often lacks social protection, and presents health and safety risks. An absence of protective gear, such as masks and gloves, exposes workers to toxic chemicals, insects, and dangerous bacteria present at dump sites. These risks often extend to community members living near dumps. Moreover, as part of an informal sector, waste pickers are often vulnerable to exploitation and harassment.

Finally, mismanaged plastic waste also contributes to significant economic disruption. A 2015 study estimates there was a US$2.1 billion impact to the ASEAN economy across industries such as tourism, fishing, and shipping.[14] This loss of income is the result of trash-filled beaches deflecting tourism, plastic waste filling and tearing fishing nets, and ocean plastic clogging or redirecting ships from efficient lanes. At the same time, the mismanagement of plastic waste presents a significant missed opportunity - the World Bank estimates that US$6 billion per year in value is lost each year in Thailand, the Philippines, and Malaysia when single-use plastics are discarded rather than recycled.[15]

CIRCULATE CAPITAL: INVESTING TO ADDRESS PLASTIC WASTE IN ASIA

INCREASING CORPORATE INTEREST

In the late 2010s, groundswells of consumer activism in the United States and Europe began putting pressure on multi-national corporations (MNCs) to create more sustainable products and prevent plastic from building up in the ocean. According to Rob Kaplan, CEO and Founder of the investment fund Circulate Capital, "corporates felt consumer expectations changing, and they needed to act quickly to get ahead of them." In response, global consumer goods companies such as PepsiCo, The Coca-Cola Company, Walmart, and Unilever made public commitments to ensure their packaging would be reused, recycled, or composted by 2025.[16] However, Kaplan, who had spent a decade optimising supply chains inside such organisations, knew such MNCs had been trying to source recycled polymers used for plastic packaging at scale without success. There was simply insufficient quality and quantity of supply.

[13] UN Environment Program (2019). Plastic bag bans can help reduce toxic fumes
[14] The World Bank (2022). World Bank Approves US$20 Million Regional Grant for ASEAN to Combat Marine Plastic Pollution in Southeast Asia
[15] The World Bank (2021). Better Managing Plastic Waste Could Combat Marine Pollution and Unlock Billions of Dollars for a Circular Economy: Southeast Asia
[16] World Bank (2018). What a waste 2.0

Such public commitments were also seen as part of these MNCs' efforts to be recognised as leaders in the development of global circular economies. This allowed for collaboration with governments in building out regulatory design, both globally and in local markets. As Kaplan notes, "where there is regulatory risk, the risk is greater if you do not have a seat at the table." Working alongside regulatory entities was seen as a business imperative.

BUILDING THE CIRCULATE CAPITAL OCEAN FUND

To Kaplan, this corporate interest provided a pool of companies that were incentivised to find profitable methods to reduce plastic pollution. He hypothesised that by pooling capital from corporate investors and deploying it into developing markets, which were struggling to manage the volume of plastic waste, he could modernise, professionalise, and scale local waste management and recycling companies. For his limited partners (LPs), this would deliver commercial returns and more robust recycled plastic supply chains. This investment thesis led to the establishment of Circulate Capital in 2018.

The Circulate Capital Ocean Fund (CCOF) raised US$112 million primarily from American and European consumer goods companies with global supply chains. They included The Coca-Cola Company, PepsiCo, Unilever, Procter & Gamble, Chanel, Danone, Dow, Chevron Phillips Capital, and Mondelez International. Moreover, development finance agencies such as the United States Agency for International Development (USAID) and the U.S. International Development Finance Corporation (DFC) also backed the CCOF, allowing them to blend public and private investment.

To convince corporates of its investment thesis, Circulate Capital offered attractive commercial returns, the promise of catalytic capital, and government credit guarantees. First, the CCOF was projected to yield competitive returns, offsetting the risk inherent in testing a new strategy. Second, it drove 'catalytic capital' by scaling and replicating solutions in the recycling industry. It did so to prove that the sector was investable and ultimately to attract institutional capital. For every dollar pledged to the fund, it targets to 'catalyse' a second dollar invested into the industry, either by Circulate Capital or another party. Finally, Circulate Capital secured a loan loss guarantee from USAID and the DFC, further de-risking the investment for LPs. These factors proved sufficient to balance the risk-to-reward considerations, allowing corporate backing to build the foundation for Circulate Capital.


Photo provided by Circulate Capital.

CAPITALISING ON A CLEAR OPPORTUNITY FOR COMMERCIAL RETURNS

CEO Kaplan had been investing in global recycling infrastructure for over a decade. While working for Walmart, he optimised global supply chains, built industry partnerships, and sourced sustainable packaging plastics. Kaplan knew that Southeast Asia accounted for around 40% of all mismanaged plastic entering the oceans, and that India was the second highest producer of plastic waste in the world.[17] Thus, after assessing the waste management capabilities, regulatory restrictions, and investment landscapes in South and Southeast Asia, Kaplan built an investment thesis focused on allocating capital to waste collection and recycling infrastructure in these two regions.

Photo provided by Circulate Capital.

For decades, local waste collectors and recyclers in countries such as India and Indonesia have run viable, albeit low-margin, businesses. They collect, sort, and downcycle plastics into polyester fibres, which can be used for textiles. Yet, skyrocketing demand for high-quality, food grade, recycled plastic stock has provided an incentive to transform these downcycling entities into much higher margin businesses. Circulate Capital has made investments into collection and sorting infrastructure such as vehicles, as well as into analytics in areas such as route planning and optimisation. These investments focus on increasing collection and sorting effectiveness, creating cost efficiencies, and improving the quality of recycling feedstock. Investments into upcycling operations and technology increase the value of end products by transforming polyester textile producers into food-grade, recycled PET (rPET) suppliers, creating higher-value bottle-to-bottle plastic supply.

An example is Srichakra Polyplast, an Indian upcycling company that pioneered the deployment of recycling technology and processes in order to maximise the potential for recycled plastic. Investments from Circulate Capital helped Srichakra to build India's first and only food-contact grade plastic recycling facility approved by local and European food safety authorities. The investment enabled a six-fold increase in recycling capacity. With a consistent supply of rPET, recyclers such as Srichakra Polyplast become attractive candidates for exclusive bilateral agreements with global corporates and can be positioned for initial public offering (IPO) or sale to local conglomerates.

[17] World Bank (2018). What a waste 2.0

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> **CEO & FOUNDER,**
> **CIRCULATE CAPITAL**

However, Kaplan does not see enough co-investors in this industry. Recycling and waste management are traditionally under-funded as margins are tight, they are often provided as municipal services, and investment opportunities – with ticket sizes ranging from US$2 to 10 million – are too small for many institutional investors. Additionally, recyclers in South and Southeast Asia are often family businesses, who require deep levels of trust-building and investor education prior to making a deal. This can be time consuming and thus, less attractive for institutional allocators. Yet, for Circulate Capital, engaging with local business owners is part of their impact mission. Although it is focused on generating competitive returns, Kaplan notes that Circulate Capital is "able to integrate impact into the financial promise from the outset. It is not an add-on or trade-off that came later. It is baked into the strategy."

A DIFFERENTIATED APPROACH TO IMPACT QUANTIFICATION

CREATING A FRAMEWORK FOR IMPACT

Circulate Capital convened an impact metrics working group in 2019 when it began making its first investments. This working group consisted of leading researchers, international NGOs, development agencies, and investors, in addition to Circulate Capital and its corporate LPs. The group focused on defining a set of waste management impact metrics and the potential impact of Circulate Capital's investments. It took guidance from the International Finance Corporation (IFC) and the Global Impact Investing Network (GIIN) frameworks to develop a collection of twelve key impact indicators across three categories: environmental, operational, social.

Impact quantification was necessary to ensure Circulate Capital would remain accountable for its mission, yet there was a dearth of tools and frameworks to support environmental impact tracking at the time. While there were global frameworks and Greenhouse Gas (GHG) equivalence calculators, none were built with data and considerations pertinent to low- and middle-income countries. Hence, they were poorly suited to the contexts of South and Southeast Asia. Thus, Circulate Capital partnered with the Agency for Science, Technology and Research (A*STAR), a Singaporean statutory board, to develop a model specific to each market the firm invests in. Circulate Capital made a version of this model available as an online calculator through

its mission-aligned non-profit, The Circulate Initiative, so that it can be used by other investors, operators, and municipalities.

In addition, in early 2022, Circulate Capital joined the G7's development banks and financial institutions in its commitment to investing in women as a participant in the 2X challenge, an initiative driving investments with a focus on gender.[18] As part of this commitment, the firm set ambitious alignment targets both at the fund and portfolio level. By the end of the investment period, at least 30% of CCOF's portfolio must meet the 2X eligibility criteria.

In line with Circulate Capital's catalytic philosophy, its framework and methodologies have since been open sourced such that other investors can also quantify and share their impact.

ENVIRONMENTAL IMPACT

Circulate Capital measures its environmental impact across four primary indicators. The first is the tonnage of plastic pollution prevented from leaking into the environment, which Circulate Capital directly reduces through improved waste management. The second indicator tracks the avoidance of emitted Greenhouse Gases, which are estimated through factors such as reduced demand for virgin plastic or incineration. The third is the total waste reduced, reflecting the fact that successful models address management and recycling of municipal waste streams, including plastics and other materials such as paper and metal.

To capture its impact on more circular supply chains, Circulate Capital also measures the tonnage of recycled plastics sold. This reflects improvements in the quality of plastic that is recycled and in contributions to higher-grade end uses, such as food grade bottles, rather than lower-value end uses, such as textiles. Every new plastic recycler becomes a node in a growing circular economy, while every tonne of plastic recycled prevents a tonne from ending up in a landfill, incinerator, or the ocean. Because every investment must contribute to impact on plastic generation or recycling, Circulate Capital's investment team quantifies each potential investee company's planned positive impact during the due diligence process. The CCOF estimates it will prevent over 10 million tonnes of plastic waste from being disposed of properly and improperly over the 10-year life of the fund.

For example, the Prevented Ocean Plastic Southeast Asia initiative, which is a venture partnership between Circulate Capital, leading Indonesian plastic collector and recycler PT Polindo Utama, and Batam Materials, a buyer and marketer of high-quality recycled PET, seeks to pioneer a new recycling supply chain infrastructure. Circulate Capital's investment in the initiative will enable twelve new, high-volume collection centres and three new aggregation centres to service in-need coastal communities across Indonesia, with a particular focus on Kalimantan and Sulawesi. During the first ten years of the initiative, it aims to prevent 400,000 tonnes of plastic from entering the ocean, avoiding 800,000 tonnes of GHG emissions.[19]

[18] 2X Challenge. Criteria

[19] Prevented Ocean Plastic (2022). Circulate Capital Invests in "Prevented Ocean Plastic Southeast Asia" To Address Gap in Recycling Infrastructure and Prevent Plastic Pollution in Indonesia

Photo provided by Circulate Capital.

OPERATIONAL IMPACT

As an active investor, Ellen Martin, Chief Impact Officer, explains that Circulate Capital "builds companies to reach global standards as world-class operators [so that they] qualify for the supply chains of the world's largest companies." Circulate Capital's progress in professionalising family businesses is measured by strengthening their environmental, social and corporate governance (ESG) policies, emphasising operational best practices, and improving utilisation, productivity, and profitability. They do this by embedding portfolio managers into investee companies and enabling them to provide direct guidance and coaching. They also help to facilitate connections and legal agreements with global buyers, including from Circulate Capital's corporate investors, for end products.

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> **CHIEF IMPACT OFFICER,**
> **CIRCULATE CAPITAL**

For example, in 2020, Circulate Capital invested in Nepra, India's largest dry waste management company. Nepra specialises in the collection, segregation, processing, and recycling of municipal dry waste, including plastic, which it sells to authorised recyclers. Circulate Capital worked with Nepra to identify operational improvements through deep analysis into its collected waste material composition, the flow of waste into and out of its facilities, and its associated system economics. Nepra pursued digitisation through a central ERP (Enterprise Resource Planning) platform, real time analytics, and facial recognition for suppliers, which combine to improve traceability and operational efficiency. It also identified opportunities to improve supplier engagement, such as increasing the convenience of drop points to reduce the long distances waste pickers previously had to travel. These optimisations, among others, will help Nepra on its journey to scale to dozens of locations across India.

Photo provided by Circulate Capital.

SOCIAL IMPACT

Circulate Capital's contribution to social impact provides benefits to both communities and individuals, which it quantifies across several indicators. First, Circulate Capital quantifies direct benefits to local communities, such as increased number of households with access to collections services.

Second, Circulate Capital measures contributions to safe, stable, and dignified work. Circulate Capital does so by working with portfolio companies to reduce work-related injuries and prevent child or forced labour within the supply chain. The traceability and transparency required to assess this is often challenging as poor practices can be hidden to avoid criminalisation. Another important component is ensuring employees are paid fair, living wages. This is a concern primarily for informal waste pickers, whose wages are often unfairly reduced by exploitative intermediaries. To do this, Lucro Plastecycle, one of Circulate Capital's Indian portfolio companies, provides access to financial education and services, such as bank accounts and digital payments.

The final indicator quantifies equitable opportunities, which focuses primarily on gender equality. One strategy Circulate Capital utilises to improve female workforce participation is through providing technical assistance to portfolio companies to build Gender Action Plans and monitoring progress.

An example of Circulate Capital's social impact can be seen at Reciki, an Indonesian waste management company that provides smart solutions for waste collection, processing, and recycling. To drive growth and scale, Circulate Capital partnered with Reciki to develop an environmental and social impact matrix to track their contribution to the local community. Through this, they plan to create 400 new jobs and emphasise gender balance in their hiring, seeking to achieve a workforce that is 40% female.

TRACKING PORTFOLIO-WIDE IMPACT

To maximise its impact, Circulate Capital tracks these environmental, operational, and social indicators at a company level, and across its portfolio companies. To drive the best possible outcomes, it encourages learnings to be shared across portfolio companies through its community of investment managers and management teams. This typically results in cross fertilisation from its more mature Indian portfolio companies to more recent investees in Southeast Asia.

Best practice learnings include strategies and frameworks for vendor evaluation, standard contracts structures and legal protections, MNC

supplier positioning approach and timelines, and worker benefit design. They also include critical elements such as upholding health and safety standards. These best practices can be applied by incorporating an awareness of local contexts and dynamics, making investments more repeatable and management more effective.

LOOKING TOWARDS THE FUTURE

RESILIENCE THROUGH A DIVERSIFIED CAPITAL BASE

Circulate Capital remains focused on catalysing the waste management investment market place. For Ocean Fund I-B (US$53 million), its second fund, Circulate Capital has diversified its capital base by partnering with institutional investors such as private family offices and development finance organisations. These investors have a more conventional approach and expectations to investing in emerging markets than CCOF's corporate LPs. Additionally, they seek a more holistic impact on the plastic waste value chain, enabling Circulate Capital to broaden its investment scope beyond collectors and recyclers. As Kaplan explains, this will allow them to invest in upstream "materials, alternative delivery models, and deep technology that can transform linear supply chains into truly global, connected, circular supply chains."

> "Diversifying its capital base will allow Circulate Capital to invest in upstream 'materials, alternative delivery model, and deep technology that can transform linear supply chains into truly global, connected, circular supply chains.'"
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> **CEO & FOUNDER,**
> **CIRCULATE CAPITAL**

Circulate Capital's upstream investees include Phase Change Solutions, a materials company based in the United States that manufactures bio-based phase change materials. Their energy-efficient solutions regulate temperature, reduce carbon footprints, and have more circular end-of-life options than petroleum-based competitors. Arzeda is another of Circulate Capital's upstream investments. Arzeda is an industry-leading protein design company, also based in the United States, that seeks to replace petroleum-derived products with renewable, biodegradable alternatives. Through such investments, Circulate Capital has expanded its impact across the entire value chain – not only reducing direct plastic leakage into the environment, but seeking to migrate product design away from plastic at the source.

MOBILISING INVESTORS AND GOVERNMENTS ACROSS ASIA AND BEYOND

At present, the majority of Circulate Capital's total US$165 million AUM comes from investors based in Europe and the United States. Yet, given that 81% of the world's ocean plastic comes from Asia, Kaplan calls on "institutional investors who are financing the future of infrastructure across Asia to join us on this journey."[20] Should regional consumer goods companies allow global MNCs to build exclusive relationships with local recyclers, the limited supply of rPET could make sourcing difficult and expensive for local and regional organisations at a later stage. In addition to being a local challenge, it can limit international growth potential. For example, should regional producers plan expansion into North American and European markets, they will be subject to the same consumer and regulatory pressures that MNCs encounter.

Governments also have a role to play in developing standards and policies to drive accountability and accelerate development of the circular economy. As of July 2022, the Indian government banned all single-use plastics, such as straws, cutlery, packaging films, and cigarette packs.[21] ASEAN is also pushing for improved plastic management across its 10 member states with a 2021 action plan that includes initiatives across four pillars: 1) policy support and planning research, 2) research, innovation, and capability building, 3) private sector engagement, and 4) public awareness, education and outreach.[22] Additionally, the Thai, Filipino, and Malaysian governments have prepared circular economy roadmaps to prioritise plastics-related policies and investments into target sectors and locations.[23]

Regional and national action is taking place against a backdrop of a global movement. In 2022, a collection of 170 nations backed a historic United Nations resolution to end plastic pollution by developing a global circular economy. A global coalition of 85 organisations, financial institutions, and NGOs has also signed on to the vision. The coalition plans to put an international, legally binding agreement in place by 2024.[24] Government pressure is critical to ensure continued focus of corporates – local, regional and multinationals alike – on reducing plastic waste in Asia and beyond.

Circulate Capital's tireless efforts to catalyse action, both by driving pools of investment and quantifying its impact, illustrate how to draw together interested stakeholders, identify incentives, and take steps toward the circular economy. Going forward, it will continue to catalyse more commercial opportunities to tackle elements of the plastic waste management value chain while encouraging more investors, governments, and entrepreneurs in Asia to join their mission to reduce plastic waste at scale.

[20] Our World in Data (2021). Where does the plastic in our oceans come from?
[21] World Economic Forum (2022). India has imposed a ban on single-use plastic to tackle pollution
[22] Association of Southeast Asian Nations (2021). ASEAN Regional Action Plan for Combating Marine Debris in the ASEAN Member States
[23] World Bank (2021). Plastic waste is a growing menace, and a wasted opportunity
[24] Forbes (2022). New Coalition Calls for 'Ambitious' Global Plastic Treaty

DAWN CHAN
CEO
Centre for Impact Investing and Practices (CIIP)
info@ciip.com.sg

RAJIV LALL
Professional Research Fellow
Sim Kee Boon Institute for Financial Economics at SMU
rajivblall@smu.edu.sg

ALISON KENNEDY
Strategy & Consulting Lead and Sustainability Services Lead
Accenture Southeast Asia
alison.kennedy@accenture.com

ABOUT THE CENTRE FOR IMPACT INVESTING AND PRACTICES (CIIP)

The Centre for Impact Investing and Practices ("CIIP") fosters the growth of impact investing and practices in Asia and beyond by building and sharing knowledge, bringing together stakeholders in the community, and bringing about positive action that accelerates the adoption of impact investing. Based in Singapore, CIIP was established in 2022 as a non-profit centre by Temasek Trust, a steward of philanthropic endowments and gifts. Temasek and ABC Impact are our strategic partners.

To achieve a sustainable future for all mankind, the world needs companies that can drive positive changes at scale through products and services. Impact investing can spur the growth of such companies and help advance solutions to address the challenges that the world faces today. We believe that sustainable companies are those who pursue social and environmental impact as avidly as they pursue profits and shareholder value. By striving to generate positive and measurable social and environmental returns alongside a financial return, both impact investors and companies can achieve returns with purpose.

We are SDG Impact's anchor partner for Asia. SDG Impact is the United Nations Development Programme initiative tasked to develop resources that accelerate investments towards achieving the United Nations Sustainable Development Goals by 2030.

For more information, please visit www.ciip.com.sg

ABOUT SIM KEE BOON INSTITUTE FOR FINANCIAL ECONOMICS AT SMU

The Sim Kee Boon Institute for Financial Economics (SKBI) at Singapore Management University (SMU) is the premier Asian institute for applied financial economics research and training. This is done through multidisciplinary collaborations involving research talent from the SMU community, around the world as well as industry. The institute's focus is in the area of financial education and inclusion, sustainable finance, financial technology, and macro markets.

Besides conducting fundamental and applied research which aims at solving real-world issues, SKBI also actively engages in outreach, executive training and research dissemination through organising courses, seminars and conferences. Our purpose-oriented activities are designed to bridge the gap between theory and practice, and to act as accelerators with regard to financial policies and regulations. To maintain our relevance to finance practitioners and policy-makers, SKBI adopts a view on Asian and global economic trends.

SKBI is led by an Advisory Board that consists of prominent leaders of local and international organisations in the finance industry that have footprints across Asia, and of government agencies.

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ABOUT ACCENTURE

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