# Bangkok Post

## Full circle :

Young Asian entrepreneurs proving that the circular economy is not just for large corporations with long supply chains



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When Thai entrepreneur Thamonwan Virodchaiyan looks at leftover materials at garment factories, she does not see waste. She sees them as part of a chain of value and opportunity.

In 2017, she and her partner Amorpol Huvanandana co-founded Moreloop, a Bangkok-based startup that aims to reduce textile waste by upcycling leftover materials in garment factories.

Ms Thamonwan, 34, says the idea came to her when she observed the piles of leftover fabric at the end of the manufacturing process in her parents' garment factory. These

leftover materials often ended up being dumped somewhere. She and Mr Amorpol believed this waste should be used as a resource, so they took a year to conduct indepth surveys among more than 40 garment factories and apparel designers in Thailand.

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- <u>Pressing the mute button</u>

The surveys confirmed that most factories struggled to handle leftover materials, while other firms were keen to use these materials. Moreloop was born to act as an intermediary between them.



Jars of recycled materials are displayed in the laboratory at the Miniwiz offices in Taipei. The company's Trashlab has created more than 1,200 new materials derived from different kinds of waste. (Photo: Bloomberg)

"Moreloop sells fabrics without producing fabrics. We are a data collector that gathers information on leftover materials in garment factories, and shows it to individuals or companies who will buy these materials," said Ms Thamonwan.

Apart from selling leftover fabric on social media platforms, the company also provides apparel products such as T-shirts and bags made of leftover materials to businesses and organisations. Its revenue reached 5.5 million baht last year and is expected to grow by 45% this year.

Since 2018, Moreloop has saved more than 21 tonnes of leftover fabric, equivalent to the reduction of carbon dioxide (CO2) emissions by 300,000 kilogrammes of CO2 equivalent, she said. The company has committed to reduce emissions of up to one million tonnes in total by 2024, and looks forward to expanding to other types of waste, including paper and leather.

The Moreloop business model is aligned with the concept of the circular economy -in which reduce, recycle and reuse are stressed instead of the take-make-dispose model of conventional linear production and consumption.

The circular economy, advocates say, rests on four pillars: efficient material management, reduction of toxic substances, energy efficiency and economic incentives to produce sustainably.

In recent years, most circular economy initiatives have come from large companies with the capacity and technology to reprocess materials that they use in their own production processes. She have also succeeded in getting other players in their supply chains to participate in creating a virtuous circle.



But given the proven benefits of cutting natural resource use, small-scale business operators are increasingly being prompted to adopt the concept to green their operations or start businesses of their own.

"Many people believe that circular economy practice is difficult, and only big and well-established corporations can achieve it, but that's not always true," Ms Thamonwan told Asia Focus.

"Some large-size companies have been using linear supply chains for a long time. They may be obstinate about making the transition to a circular business model. We've observed some big companies that have recently integrated circular economy practices only in some sections of their businesses. "On the contrary, new companies can leap into circular business models right away. This means that the new generation of small and medium enterprises (SMEs) and startups have great potential in circular economy initiatives."

### SMALL FIRMS, BIG OPPORTUNITIES

Asia is the world's major waste producer, reflecting the major changes in consumption and production patterns brought on by remarkable economic growth and livelihood improvement over the past five decades or so.

The World Bank has estimated that waste generated per day in the Asia Pacific region alone will more than double, from 1 million tonnes in 2012 to around 2.5 million tonnes by 2025. Such volumes will become increasingly difficult to manage, especially when waste disposal systems in many countries are far from efficient.



Moreloop founders Thamonwan Virodchaiyan and Amorpol Huvanandana set out to reduce textile waste by upcycling leftover materials from garment factories.

The waste problem is posing a challenge for Asian nations and requires a collective effort from all sectors to drive sustainable growth models, including SMEs and startups that have emerged as prominent players in the circular economy field.

Miniwiz, based in Taipei, recently took a further step during the Covid-19 pandemic by turning disposable masks, gowns and hospital waste such as bedsheets, pillows and blankets into textiles to make "the new generation of personal protective equipment".

The company, founded in 2005 by structural engineer and architect Arthur Huang and Jarvis Liu, has worked with partners including the Center for Innovation at Fu Jen Catholic University Hospital in Taipei to develop a modular hospital ward made of recycled materials such as aluminium, recycled polyethylene terephthalate and bottles.

The ward can be deployed and assembled to fit into any space to serve rising demand during a pandemic or other medical emergency.

"As we are worried about personal safety and personal hygiene, this issue [waste problem] is going to be worse. Because if single-use is the only way for us to have clean and safe products delivered to us, I think we might even have a greater environmental problem in the long run," said Mr Huang during the Circular Living Symposium 2020 held by SET-listed PTT Global Chemical Plc (PTTGC) in November.

"We want to be able to react as quickly as possible to be able to turn most of these wastes into new-generation products as building blocks for any long-term, durable infrastructure." Miniwiz is already well-known for its Trashlab, whose designers and engineers have invented more than 1,200 sustainable materials that can be used in everything from consumer goods to furniture and building materials. All are made from what the company calls "the world's richest resource" -- garbage.

### ECONOMIC IMPACT

There is a compelling economic case for the circular economy, according to the United Nations Economic and Social Commission for Asia and the Pacific (Escap). It estimates that the global transition to a circular economy could provide more than US\$1 trillion in material cost savings by 2025 and generate at least 100,000 new jobs.

In major consumer goods sectors, the material resource savings generated from a circular economy could result in savings of up to \$706 billion annually.



Source: ThredUP, cited in "Financing the Circular Economy", Ellen MacArthur Foundation

"Considering that the Asia Pacific region accounts for more than 60% of the global share of key fast-moving consumer goods sectors, the scale of potential benefits would positively impact the region's economic development," said a report by Escap.

Another study conducted by the UK-based Ellen MacArthur Foundation found that if circular economy practices were applied in five key sectors in China -- steel, aluminium, cement, plastics and food -- it could save businesses and households \$10 trillion, or equivalent to 16% of China's projected gross domestic product (GDP) in 2040.

The foundation points to some hopeful signs, among them the participation by major corporations in the New Plastics Economy Global Commitment. Some 200 corporations representing more than 20% of the world's plastic packaging output have adopted "transformative plastics circularity" commitments that they pledge to fulfill by 2025.

Still, a lot of groundwork needs to be laid in order to bring the circular economy into the mainstream, notes Theo Jan Simons, a partner with McKinsey & Company. And that will cost money.

"As we transition to a circular economy, it requires a significant demand for investment. We need to invest in a collection and recycling system. All these need to be integrated into existing industries," he told the PTTGC symposium.

"This means we need to attract and coordinate the right investor groups that can make this transition possible." The Ellen MacArthur Foundation has noted a major increase in the global creation of debt and equity instruments related to the circular economy, especially given that no such funds existed in 2017.

Since the beginning of this year alone, it said, assets managed through public equity funds with the circular economy as the sole or partial investment focus have increased six-fold, from \$300 million to over \$2 billion.

DealStreetAsia, a Singapore-based startup information platform, reports that investments in Southeast Asian startups have jumped significantly during the pandemic, and some of these are pursuing green innovation.

Though e-commerce and fintech ventures topped the list, some funding has gone to companies promoting circular economy practices. Among them is the Singaporebased bioplastic maker RWDC Industries, which raised \$133 million to expand its production capacity, and the waste management solutions enterprise Blue Planet, which raised over \$10 million.

#### YOUTH MOVEMENT

The concept of the circular economy has also attracted young entrepreneurs to challenge themselves and the linear business model.

The Singapore-based social enterprise Youth Sustainable Impact Southeast Asia (YSI SEA), says that around 1,140 candidates from across Southeast Asia applied for its innovation programme this year with solutions for the circular economy, energy, and food and agriculture.

Twenty-three of them were selected in the final round and pitched their ideas at a virtual Demo Day in July. Among them were Frescue, a startup formed by Singaporean and Philippine entrepreneurs, which proposes a marketplace that connects surplus food in the supply chain to customers on a single platform.

Also chosen was the Malaysia-based startup Datanam, which aims to use data to run precision vertical farming and match demand and supply of farm products, and Singapore-based Circular Blueprint, which wants to upcycle plastic waste into ecobuilding materials.

Irsyad Ramthan, co-founder and chief operating officer of YSI SEA Co, said the circular economy had gained momentum in recent years and now was a good time for young people to "experiment, make mistakes and find early champions" that can serve as the blueprint for innovation and business models.

"I have a strong belief that youth in Southeast Asia can see the effects of consumption and waste challenges first hand, and they have the freedom to speak up against it and think critically without being tied down to pure corporate interests," said Mr Ramthan.

"That will definitely change over time, but a combination of incomplete information, a keen sense of the problem at hand, and a general optimism that it is a problem that can be solved over the course of their lifetime drives young people to do something to solve these challenges."