

CIRCULAR ECONOMY BUSINESS CASE STUDIES IN SOUTHEAST ASIA



Mud More Value

- Saraburi, Thailand
- Fashion
- facebook.com/mudmorevalue
- Analysis period: 2017-2026

Using Low-Value Waste to Dye High-Valued Fashion

Business Spotlight

Mud More Value is a Thai sustainably-focused fashion enterprise based in Saraburi Province, 112 km north of Bangkok. Founded by Wannapa Kitisopakul (known as Ly), product designer, the company designs and produces contemporary tie-dye garments and home textiles using natural dyes derived from cow manure and spent coffee grounds, combined with the brand's signature airbrush technique. Using circular economy principles, Mud More Value uses manure and coffee grounds – low-value wastes – to dye the company's high-value garments. Water consumption and energy use, as well as the associated greenhouse gas (GHG) emissions, are significantly reduced. The success of Mud More Value hinges on stylish design and quality products, supported by compelling story as well as the founder's perseverance in overcoming dye quality challenges and people's reticence concerning cow manure. Today, eight years later, the brand has secured strong customer loyalty as well as international recognition from China, Taiwan, Japan, and South Korea, and the company has ambitious plans to expand into other international markets.

Keywords

Circular fashion, Organic dyeing, Agricultural waste

Innovation

Product design, Manufacturing, Resource efficiency, Resource substitution



Context and baseline

Saraburi Province is Thailand's largest dairy-producing region and usually known for its dairy farms, sunflower fields, and curry puffs. The province is home to over 3,100 dairy farmers with over 115,000 dairy cows and 12 milk collection centres and cooperatives. Every day, an estimated 1,500–2,000 tonnes of solid cow manure is generated, which translates to 500,000–700,000 tonnes per year, of which about 5,000 tonnes come from organic farms. Most of this waste goes into organic fertilisers (but the price can be as low as THB 2 per kg), while the rest is transformed into biogas, biochar briquettes, and flowerpots. At the same time, the textile and fashion industry in Thailand uses large volumes of synthetic dyes, and the dyeing process has high water and energy consumption (50–150 L of water per kg of fabric) and produces effluents which pollute the rivers. Thailand's rapidly growing coffee consumption – up to 340 cups per person per year in 2024¹ – has also resulted in large amounts of used coffee grounds, particularly from coffee shops, and these are usually discarded with other municipal waste in landfills without any value recovery.

Mud More Value's business model stems from the observations of founder Wannapa Kitisopakul – known as Ly – concerning challenges and opportunities, coupled with her aspiration to create sustainable products to take care of nature, people, and society while representing the unique identity found in her own hometown. As an industrial designer, Ly uses her design and home textiles expertise to create a new sustainable fashion business using extracts from cow manure and coffee grounds for the dyeing of high-value products. And at the same time she is also helping her hometown become known for sustainable dairy farms.

Her business journey required more than a year of research – including experiments and failures – to perfect a method for transforming cow manure and coffee grounds into natural textile dyes. With assistance from the Thailand Textile Institute, the Department of International Trade Promotion (DITP), the Department of Industrial Promotion, the Sustainable Arts and Crafts Institute of Thailand (SACIT), and university partners in the domain of product development and market access, she achieved success during the company's challenging start-up period.

Innovation

Mud More Value's innovation is best described by its development of an extraction process to convert organic dairy-cow manure from farms and spent coffee grounds from local cafes into natural textile dyes. The dye is applied to cotton textile sourced from local fabric suppliers using traditional tie-dye (*mat yom*) and a distinctive natural-dye airbrush technique. This produces minimal but stylish 'slow fashion' clothes in warm earth and golden sepia tones. The post-extraction manure and coffee grounds are then returned to vegetable farms as natural fertiliser.

The brand's name – a play on Thai and English words – reflects the company's concept. 'Mud' translates as 'tie-dye' in the Thai language, 'Mo' is the sound of a mooing cow, and 'Value' points to the value added to materials normally treated as waste. The company's innovation addresses product and service design (i.e. oversized earth-tone colours on garments targeting eco-conscious and slow-fashion consumers) and manufacturing (their water-based dye-extraction and its use in fabric and garment dyeing).

While other natural-dye traditions, such as indigo, mangrove, or mud-dyeing, do exist in Thailand, the use of dairy-cow manure extracts for textile dyeing is novel in the country, and perhaps in the region as well. The company's innovation has reshaped the value chain by linking organic dairy producers, local seamstresses working from home, and design-focused and sustainability-conscious buyers in Thailand and beyond. Today, the brand's recognition includes the *Green Production Gold Standard*², selection in the Thai Department of International Trade Promotion (DITP) Fashion Connex 2024, and inclusion in the SACIT Craft Collection.³ The company has also secured intellectual-property rights protection for its signature patterns and product designs.



¹ <https://www.nationthailand.com/business/economy/40053517>

² From the Ministry of Natural Resources and Environment.

³ The Sustainable Arts and Crafts Institute of Thailand (SACIT), under the Ministry of Commerce, promotes and preserves traditional Thai handicrafts by empowering local artisans and driving a sustainable creative economy globally.

Circular Economy impact

Mud More Value illustrates resource substitution and resource efficiency:

- The use of organic dye to replace synthetic dye illustrates resource substitution, and also avoids toxicity issues associated with different synthetic dye categories. Moreover, cotton is a renewable material as opposed to non-renewable synthetic fibres.
- The dye extraction and dyeing make efficient use of materials, water and energy, demonstrating resource efficiency. In particular, airbrush dyeing reduces water and energy use by half compared to traditional tie-dyeing, and annually saves 6.4 m³ of water use and 30 kg of liquid petroleum gas (LPG) use.
- The natural dye is extracted from approximately 144 kg of organic dairy-cow manure and 108 kg of spent coffee grounds per year; however, only a tiny fraction of this input ends up in the garments, and the remainder is returned for fertilisation on organic farms.

Business and market impact

The company is using marginally valued residual streams in the production of highly-valued fashion garments and home textiles, enabling them to compete with their own authentic story, design, and material narrative, rather than having to rely solely on price. From their initial start at the Chatuchak weekend market in Bangkok, Mud More Value's products have been moved to select trade fairs such as the OTOP⁴ and the SACIT Fair, and are now available at recognisable Thai craft outlets (e.g. King Power duty free shops, tourism events) and online platforms. With an initial investment of THB 100,000 (around EUR 2,800) in 2018, Mud More Value has achieved steady revenue growth of about THB 1.6 million per year (about EUR 42,000) on average during 2023–2025, with 30% reported profit. The brand is positioned in the 'sustainable fashion' and emerging 'quiet luxury' sectors both domestically and internationally. Between post-Covid 2020 and 2025, the company enjoyed 60% growth, with Thailand as their major market (75%), followed by regional markets (25%). Recognition from SACIT and the Department of International Trade Promotion (DITP) has reinforced the company's market credibility and helped open buyer relationships in East Asian markets, especially in China, Taiwan, Japan, and South Korea.

Stakeholders

Mud More Value operates as a multi-party local value chain. The Dairy Promotion Organization (DPO) of Thailand and partner organic dairy farmers supply organic cow manure as the primary feedstock (at THB 5 per kg), while local fabric producers and a network of about 20 home-based seamstresses (some 15 households) in Saraburi perform tailoring on a per-piece payment basis, allowing women in the community to earn approximately THB 5,000–8,000 extra income per month to meet household expenses, including for childcare, education and health. SACIT has supported product development and craft positioning, while DITP advises on and supports export-market access. The company has employed ten people from the local community; it has been reported that one of them was able to write off her debts from her employment with the company.

Implementation

The company spent about one year on research and development and went through several iterations before the organic dye-making process became stable. Distribution channel building and patent registration also took some time to complete. Mud More Value's success hinges on the strong design concept, coupled with the earth-tone colours, styles, and patterns, along with access to a reliable organic feedstock through the Dairy Promotion Organisation and a distributed cottage-industry production model that keeps the production cost low. Moreover, the owner's slogan, 'No Garbage, Only Materials Waiting for New Values,' clearly presents the brand's circular economy narrative.

Despite success in the early years, the company has faced challenges in building their brand and in changing people's perceptions about use of manure-derived dyes for fashion production. The high cost of rent at shopping malls, marketing costs, and gross sales charges imposed by online platforms have also posed barriers to the business, as well as the declining number of skilled and responsible seamstresses available locally. Going forward, the brand is seeking support from the Thai Department of International Trade Promotion (DITP) to explore new markets abroad, and they are also proactively working with vocational skills training schools and garment factories to engage additional skilled seamstresses.

4 OTOP, for One Tambon, One Product, is a Thai government initiative to promote local cultures and products to drive local economies and position Thai products as premium products globally.

Takeaways

Mud More Value demonstrates that circular economy innovation is not limited to advanced technologies or large-scale industries. By combining creative design, local resources, and entrepreneurship, the business is using abundant agricultural waste in the production of premium fashion products with strong market appeal. Their experience shows that value creation in the circular economy depends as much on product design, branding, and storytelling as on material innovation itself. This case also highlights the importance of an enabling ecosystem, because technical support, product development assistance, intellectual property rights protection, and market access enabled by public agencies have helped the business overcome early technological and market access barriers.



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Disclaimer

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