

## CIRCULAR ECONOMY BUSINESS CASE STUDIES IN SOUTHEAST ASIA

## Bayo Manila Inc.

-  Manila, Philippines
-  Retail apparel
-  bayo.com.ph
-  Analysis period: 2019-2023

## Circular Fashion, Crafted Locally

## Business Spotlight

Bayo is a well-established, sustainability-driven fashion brand and retailer in the Philippines. In tandem with the Bayo Foundation, established in 2017, Bayo works towards 'using fashion as a vehicle for social good.'<sup>1</sup>

In 2019, Bayo started its #JourneytoZero initiative to steer Bayo's clothing production from linear to circular, targeting net zero carbon emissions (by 2030), zero waste and full circularity. Bayo shifted to using natural fibres and fabrics (such as local Philippine silk and cotton). Moreover, Bayo has improved the usage efficiency of resources and materials, reduced textile waste and transformed fabric scraps into timeless fashion apparel in collaboration with local women's weavers' groups.

Circularity impact is evident in the 30% savings of electricity costs in their factories and 30% reduction in water consumption and lower input costs, among others. Investments in cutting technology and software have resulted in reductions in production offcuts and fabric waste from 35% to 5–7% in 2021. The remaining offcuts are used as supplemental wefts for the weaves, or co-processed with residual

plastic wastes (like bubble wrap and plastic sando bags) into fire-retardant flooring tiles and plywood molds which are used for wall cladding and flooring in stores.

Bayo continues to advance its circularity journey and to scale up its programmes and projects beyond their current scale, including through R&D in such areas as regenerative fabrics, natural dyes, fabric wastes recycling, and upcycling. By so doing, the owners aim to demonstrate that fashion can indeed become a strong platform for circularity.

 **Keywords**

Textile circularity, Sustainable fashion, Regenerative fashion, Retail clothing

 **Innovation**

Product design, Manufacturing, End-of-life management, Resource circularity, Resource efficiency, Resource substitution

<sup>1</sup> Source: Bayo Manila Inc. UN Global Compact, Communication on Progress Report 2021.

### Context and baseline

Bayo (which translates to 'clothing' in the Ilonggo dialect) is a homegrown Philippine fashion brand established in 1992, acquired in 2014 by the husband-and-wife team of Leo and Anna Lagon. The couple had already been operating two other successful fashion retail companies, UNICA and Viseversa. These had already embraced sustainability through the adoption of waste minimisation and good manufacturing practices, even though these were not sustainability-labelled. The innocent question from the couple's 12-year-old daughter about what happens to all the production waste prompted them to reflect and move forward with renewed purpose.

They became increasingly aware of the harmful impacts of fashion, not only because of the waste created but also because of human rights and labor issues, especially among women. They realised that most of the industry's greenhouse gas (GHG) emissions were traceable to value chains, with as much as 75% emanating from extraction and textile production, rather than from garment manufacturing. They became conscious of the high water consumption contributing to water scarcity, and water contamination with chemical dyes and microplastics arising from the laundering of synthetic fibres and garments. In response, Bayo's owners resolved to transition to sustainability and improve the company's value chains. In 2017, the owners established the Bayo Foundation with the goal to 'use fashion as a vehicle for social good.'<sup>2</sup>

In 2020, Bayo committed to the United Nations Global Compact principles and joined the Philippines national network. This enabled Bayo to become more systematic in its efforts to contribute to the global Sustainable Development Goals (SDGs). According to the owners, 'Our purpose thus became clearer to us.'

### Innovation

In 2019, Bayo launched #JourneytoZero - a commitment to transform clothing production from linear to circular, targeting zero carbon emissions (by 2030) and zero out-waste generation in the process.

'Journey to Zero' comprises various sustainability programmes. Of particular relevance to the circular economy, Bayo implemented innovations in materials sourcing (and associated fashion designs) and in production processes. Moreover, as a brand with a clear sustainability and responsibility

commitment, Bayo is influencing consumer choices towards circular fashion.

Bayo puts primary emphasis on incorporating more sustainable fabrics and other materials into garment designs and manufacturing. Bayo therefore partners with local handweavers to preserve their art and associated cultural traditions, while increasingly making use of alternative, local and more sustainable materials, particularly Philippine cotton and silk, and weaving in fabric scraps and alternative textile fibres, particularly from the invasive Bakong plant. Bayo has also made sample garments out of recycled PET which, in the absence of local suppliers, is still imported from abroad.

In the production facilities, Bayo works to reduce waste in all its forms to zero. Fabric waste has been minimised through improved garment design, production planning and cutting room operations, including automation, with remaining fabric waste being upcycled into fabric or shop furnishings. Moreover, Bayo is taking measures to improve energy and water efficiency, and switch to renewable energy with its solar PV system.

### Circular Economy impact

Through its different initiatives Bayo is contributing to each of the core circular economy strategies of efficient use of materials, energy and water (resource efficiency), circular use and recovery of materials (resource circularity) and substitution by renewables (resource substitution).

**Resource efficiency:** To support resource efficiency in the consumption stage, Bayo is designing garments with a view to a long useful lifetime by focusing on aesthetics, silhouette and quality so that the garment pieces can be worn for life and passed on to the next generation.

Bayo deploys improved production planning, cutting technology and software for fabric layout and cutting, which has significantly improved the efficiency of fabric use, and reducing fabric waste by 80% from 35% of incoming fabric in the past to a mere 5%–7% of incoming fabric. Selection of better-quality materials has reduced the need for pre-washing, in turn saving 30% on water use. Biodegradable, corn-starch-based reusable containers are utilised for distribution to stores, which save some 1 million pesos annually (~EUR 18,000). Consolidation of logistics has reduced vehicle use by 30% with associated savings on fuel and avoidance of greenhouse gas and other air emissions. Furthermore, the shift to locally

<sup>2</sup> Source: Bayo Manila Inc. UN Global Compact, Communication on Progress Report 2021.

produced textile fibres is reducing transport fuel use and emissions in the supply chain. Bayo is also assisting local silkworm and cotton farmers to revive local production, with the support of government and industry partners. The company is also working with weavers to create designs that fuse local culture with modern sensibility, forming part of the company's fashion collection that reintroduced traditional Philippine fabrics to a mainstream market.

**Resource circularity:** Bayo prioritises upcycling and recycling of fabric waste (5%–7% from cutting operations). In 2018, women weavers from Argao used some 1600 kg of fabric waste as auxiliary wefts to produce nearly 4000 m of quality fabric with a unique appearance due to the incorporation of textile scraps. Furthermore, Bayo set up its own 1 metric ton/day recycling facility to co-process fabric waste with plastic waste, from its own operations and/or as collected by the Pure Oceans nonprofit organisation, to produce fire-retardant furnishings for their stores.

**Resource substitution:** Bayo has installed solar panels for its factories, to replace fossil fuel-based power with renewable power to achieve 30% cost savings on power purchases. Bayo also developed a new textile-fibre from the Bakong plant (an invasive species in Santa Teresita in a lake area in Cagayan), which is dyed with less hazardous Oeko-Tex certified dyestuffs and auxiliary chemicals.

## Business and market impact

Bayo's circularity efforts have resulted in input savings, reduced fabric material wastage and lowered operational expenses for energy and packaging waste. As a further business commitment, Bayo works towards selling its products inclusive of a carbon price to offset GHG emissions from production so that garments are net carbon neutral. This is supported by online user interface. In 2021, already 60% of product sales included carbon offsetting, but further improvements are needed to track and claim 100%, duly supported by proper and verifiable metrics.

The Bayo business model is aimed to merge business success with benefits for the environment and society, especially for marginalised communities and women's groups, even at the expense of some short-term financial profit. In the owners' view: *'Money is important for financial growth, but happiness and fulfillment comes from community building.'*

Bayo committed in 2020 to the 10 guiding principles of the United Nations Global Compact (UNGC). In 2022 it was adjudged the Most Outstanding Implementor of the Sustainable Development Goals

(SDGs) within the small and medium enterprises (SMEs) category by the Global Compact Network Philippines (GCNP). In 2023, Ms. Lagon was voted to become a member of the Board of Trustees.

## Stakeholders

Through its Journey to Zero, Bayo has prioritised the local sourcing of natural fibres; the preservation of local cultural traditions in garment design, weaving and production; and zero waste-production practices.

Bayo has helped silkworm farmers in Benguet to revive the sericulture industry. The company has also collaborated with Philippine Textile Council (HABI), the Philippine Fibre Industry Development Authority and with farmers to increase the supply of Philippine cotton and use locally produced cotton yarns instead of imported cotton and synthetic fibres.

Community partnerships and livelihood programmes have been developed in Aklan and Cebu provinces for hand-weaving, and Benguet and Misamis Oriental for silkworm farming. A business programme with Ambension Silk Enterprise has also been established as a social enterprise in Bulacan, which it provided with new looms and government mandated work benefits to the weavers, even though they were not company employees. Bayo supplied them with local, eco-friendly, and OEKO-TEX certified yarns instead of imported polyester, and taught them how to incorporate production offcuts in the weft of the textiles, thus making handwoven textiles with recycled fabric woven in. Bayo has thus helped to upgrade the skillset of the weavers, and by 2021 had expanded the number of community weavers from 5 to 20 across Argao and Bulacan with continuing efforts to train more weavers who will integrate within Bayo's value chain.

As part of its overall approach, Bayo strategically identifies and supports women-owned and women-led enterprises in their supply chain. In fact, 90% of the vendors that Bayo collaborates with are owned and operated by women, and 100% of the weaving communities Bayo works with are led by women.

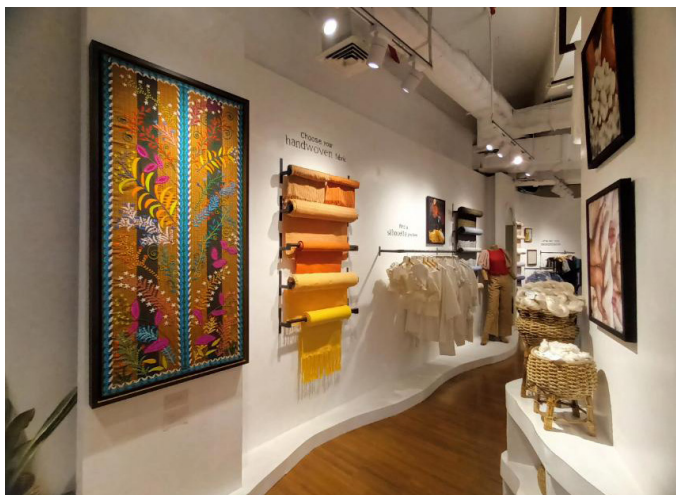
Through the Bayo Foundation, the company has further established its community-partner programme to mentor and connect the weavers and designers of its affiliate brands. The goal is to have a dedicated marketplace where independent artists and communities have a chance to test-market their product to Bayo's customers. Proceeds of this programme go directly to the weavers and their partner designer.

## Implementation

Bayo continues to invest in R&D on various aspects of the business, such as regenerative fabrics, natural dyes, fabric waste recycling and upcycling.

Bayo's owners would welcome more investors to start locally manufacturing natural, regenerative or recycled PET fabric to make it more affordable and available for large-scale use. Bayo is also keen to fully utilise and possibly expand their textile recycling facility beyond the current pilot scale, in collaboration with external technology and investment partners.

In 2023, Bayo Foundation transformed Bayo's premium Greenbelt Makati store with an atelier to show clients the slow, careful and mindful creative processes that go into Bayo garments, while also presenting the company's natural or regenerative fabrics and the hand-woven textiles that are the distinctive features of the Bayo collection.



## Takeaways

Ms. Lagon believes that fashion can be a strong platform for creating a shift to circularity. While this may first appear daunting, the industry can start with low-hanging fruits when choosing materials, designing out waste and producing clothing with a less intensive use of resources which are, by themselves, good for business itself. But for her businesses should first educate and implement reformative practices within their own companies and their value chains, emanating from the right set of values that puts sustainability above immediate financial gains to create a positive impact on the lives of the people in the communities in which the business operates.



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