

CIRCULAR ECONOMY BUSINESS CASE STUDIES IN SOUTHEAST ASIA



Tai Baan Crafts

-  Vientiane, Lao PDR
-  Handicrafts
-  www.taibaancrafts.com
-  Analysis period: 2024-2025

Circularity Practices in Responsible Handicrafts Production

Business Spotlight

Founded in 2011, Tai Baan Crafts has introduced circular business practices into traditional Lao handicrafts so as to achieve measurable social, environmental, and market impact. Working with more than 300 village artisans across Lao PDR, the company is using natural fibres and recovered aluminium, applying wastewater treatment and cleaner dyeing techniques, and making use of re-fab techniques that transform all handwoven textile remnants into patchwork fashion and home-textile products. At their Nakham weaving and dyeing centre, established in 2024, a fuel-efficient stove for hot dyeing was installed in 2025 to lower the use of firewood by up to 40% compared with the conventional stoves used by village artisans for natural cotton dyeing. The 'Make Spoon Not War' initiative, which dates back to 2011, converts aluminium recovered from unexploded ordnances (UXO) into income-generating decorative items produced by UXO-affected communities. These practices reduce waste and pollution, strengthen livelihoods, add product value, and support export growth to Europe and Taiwan as recognised by the 2025 CBI Sustainable Business Award and recognition by the World Fair Trade Organization (WFTO).

 Keywords

Natural dyeing, Fabric repurposing, Aluminium recovery

 Innovation

Manufacturing, Resource circularity, Resource efficiency, Resource substitution



Context and baseline

Tai Baan Crafts is a social and fair-trade enterprise set up to address three challenges in Lao textile production: limited rural income, weak export-ready quality systems, and resource-intensive dyeing techniques. Since the establishment of the enterprise in 2011, it has worked with more than 300 village artisans across Lao PDR, many from communities that are growing cotton, raising silkworms, and using natural dyeing knowledge. However, traditional village dyeing has relied on wood-fired stoves, which exposes the artisans to smoke, and the dyeing processes lack consistent wastewater treatment, colour tracking, or safe chemical management. As Tai Baan began expanding into Business to Business (B2B) and export markets, these production deficiencies constrained the scale, quality, and transparency of the firm. The Nakham weaving and dyeing centre was developed to address these baseline issues by centralising cleaner dyeing, improving production control, demonstrating fuel efficiency, and creating a practical learning hub for artisans. Key partners include the Lao Textile Association and the Lao National Chamber of Commerce and Industry (LNCCI).

Innovation

Tai Baan's innovation is the Nakham weaving and dyeing centre that opened in 2025 and created a practical production and learning facility that elevates traditional Lao dyeing to a cleaner, more consistent, export-ready system. The centre is improving the company's product designs and manufacturing for cotton and silk scarves, wraps, throw blankets, pillowcases, and B2B samples. Controlled dye recipes, colour-card tracking, wastewater treatment, and safer dye choices have been introduced, including natural dyes and AZO-free chemical dyes for buyer-compliant production. A fuel-efficient stove for hot dyeing was installed in 2025 to reduce the use of firewood by 25%–40% compared with the conventional stoves used by village artisans. The company's innovation is not the invention of natural dyeing itself, which is traditional in Lao PDR, but the integration of cleaner technology, quality control, safer inputs, and artisan training into one replicable model. Buyer confidence is strengthened, and this in turn enables Tai Baan to scale their production and sale of responsible handmade textiles.

Circular Economy impact

Tai Baan Crafts practices contribute to the circular economy by switching to renewable materials (resource substitution); using materials, water and energy more efficiently (resource efficiency); and recovering and reutilising previously discarded materials (resource circularity).

- Resource substitution is reflected in the use of natural fibres, natural dyes, and firewood, which are combined with AZO-free chemical dyes for safer production and reduced environmental risk. At the Nakham centre, locally sourced cotton, silk, indigo, turmeric, leaves, and bark have replaced resource-intensive or harmful inputs while preserving the Lao textile heritage.
- Resource efficiency is achieved through a fuel-efficient stove for hot dyeing which uses 25%–40% less wood compared to conventional village stoves, reducing fuel demand, smoke exposure, and dyeing costs.
- Tai Baan also applies resource circularity through its re-fab technique: no handwoven textile remnants are wasted, as scraps are repurposed into patchwork fashion and home-textile products for Tai Baan's retail store. Aluminium recovered from unexploded ordnances is also transformed into decorative handicrafts through the programme known as 'Make Spoon, Not War.' Wastewater treatment is further reducing pollution risks before discharge.

Taken together, these practices are reducing material waste, energy use, chemical risks, and resource leakage while creating higher-value products.



Business and market impact

The Nakham centre strengthens Tai Baan's business by linking sustainability to export readiness. Cleaner dyeing, natural materials and AZO-free dyes, wastewater treatment, re-fab patchwork design, and standardised colour control are all helping to meet B2B buyer expectations for transparent and responsible supply chains. The re-fab technique also increases value from handwoven textiles by turning what would have been unusable fabric into sellable fashion and home-textile products instead of waste. The fuel-efficient stove reduces fuelwood use by up to 40%, thus lowering dyeing costs as production volume grows. Because the centre has only recently been established, data about full cost savings will depend on order volume, dyeing service uptake, and staff utilisation. Tai Baan expects the investment to pay back within five years as export orders increase. Recognition through the CBI Sustainable Business Award and WFTO¹ Guarantee System has strengthened the company's credibility and is supporting access to buyers in Europe, including Germany, as well as in Taiwan.

Stakeholders

Tai Baan's model depends on a connected stakeholder system. More than 300 village artisans contribute weaving skills, local knowledge, cotton and silk production, and cultural textile designs. In 2025, Panyanivej Organic Farm began supplying natural dye materials such as indigo and mango leaves, tree bark, and turmeric, strengthening the link between farmers and clean textile production. Tai Baan's Vientiane team manages product development, quality control, export coordination, dyeing services, and buyer communication. The Lao Textile Association and Lao National Chamber of Commerce and Industry are supporting sector connections and business development. This model benefits rural artisans in three ways: the income from village-based production supports local economies; farmers can count on demand for the cotton and plants they grow that are suitable for textile production and dye-making; and young Lao workers are given skills development at the Nakham centre, connecting traditional craft with export markets.

Implementation

Implementation has focused on preparing the conditions for scale. Tai Baan established the Nakham weaving and dyeing centre to install a fuel-efficient stove, introduce wastewater treatment, standardise dye recipes, test natural and AZO-free

dyes, and train artisans in cleaner production. The incentive is strong: the model can reduce the use of firewood by up to 40%, improve product consistency, and increase buyer confidence in responsible Lao textiles.

The main barrier, however, is market volume. More international orders are needed to fully utilise the centre, recover investment, and make dyeing services financially sustainable. Scaling also requires skilled labour, reliable supplies of natural dye materials, and coordination among farmers, artisans, and the Vientiane team. The stove can be replicated locally because it uses local materials such as bricks, but replication must be paired with quality systems and market demand.



¹ CBI: Centre for the Development of Imports from developing countries (original Dutch: Centrum tot Bevordering van de Import uit ontwikkelingslanden); WFTO: World Fair Trade Organization.

Takeaways

Tai Baan Crafts shows that circular economy innovation can come from upgrading traditional practice without fully replacing it. The most significant lesson learned so far is to combine natural fibres, natural and AZO-free dyes, fuel efficiency, wastewater treatment, and re-fab patchwork design with quality control and market access. The model is proving that circular solutions become stronger when they eliminate textile waste, reduce resource use, protect artisans, preserve cultural skills, and create products that responsible buyers can trust.



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