





## CIRCULAR ECONOMY BUSINESS CASE STUDIES IN SOUTHEAST ASIA



## The Jungle Jar by Tiger Trail Travel

-  Luang Prabang, Laos
-  Sustainable Tourism
-  [laos-adventures.com](https://laos-adventures.com)
-  Analysis period: 2021-2025

## Circular Bamboo Bottles for Sustainable Tourism

### Business Spotlight

Tiger Trail Travel Laos launched the Jungle Jar in 2021 under its FairTrek programme, a circular economy initiative designed to support both the tourism and handicrafts sectors. It supports rural communities – particularly women and older villagers – to handcraft bamboo water bottles as an eco-friendly alternative to single-use plastic bottles.

The innovation combines traditional bamboo craftsmanship with sustainable product design and global market perspective. Locally sourced bamboo is transformed into reusable, biodegradable bottles, maximising material circularity, resource efficiency, and substitution of imported plastics.

The initiative benefits over 80 families, generating additional non-seasonal income while preserving farming livelihoods. Products are sold wholesale, in tourism outlets, and online, supporting employment, local revenue generation, and funding of education through a dedicated community education fund.

Future goals include scaling production and replicating the model in other underserved villages still in need of supplementary income opportunities. The initiative also aims to diversify by developing additional community-based projects such as mushroom or honey farming – further demonstrating

how inclusive, circular design can empower rural communities while protecting the planet.

### Keywords

Bamboo crafts, Plastic alternatives, Women-led enterprise, Social impact, Sustainable products

### Innovation

Product/service design, Manufacturing, Resource circularity, Resource substitution



## Analysis of The Jungle Jar

### Context and baseline

The Jungle Jar initiative addresses two pressing challenges. First, the excessive use of single-use plastic bottles with its resulting pollution, including in and around tourist attractions, and which is exacerbated by limited rural waste management infrastructure. Second, the economic vulnerability of rural Lao communities, especially during the off-season and in the wake of the COVID-19 pandemic, which left many families without a stable income.

The project originated from Tiger Trail Travel's FairTrek programme, active since 2007 in promoting sustainable tourism and community development. In response to these challenges, in 2021 Tiger Trail partnered with some 10 families from Huay Fai Village to create a circular economy solution of handcrafted bamboo water bottles. This initiative utilises locally abundant bamboo, offering an eco-friendly alternative to plastic water bottles while providing a stable, year-round source of additional income. Key partners include Tiger Trail Travel (providing training, tools, and market access), the local community (contributing labour and workspace), and international educational institutions involved through a service-learning programme that promotes both awareness and sales.

### Innovation

The Jungle Jar initiative introduced a circular product: handcrafted bamboo water bottles as a sustainable alternative to single-use plastic bottles. This product is innovative because it combines traditional bamboo craftsmanship with modern product design, eco-friendly preservation techniques, and biodegradable materials. Unlike the currently dominant reliance on plastic, the bottles are fully biodegradable, made from locally-sourced, fast-growing bamboo, significantly reducing plastic waste and related pollution. The innovation focuses primarily on sustainable design for reuse of the Jungle Jars, community-based production, and biodegradability at the end-of-life stage for the bottle.

This circular approach is relatively new to Laos and its tourism sector, providing an encouraging example of eco-design for a community-based social enterprise. A similar project was implemented in Vietnam a few years ago. However, although other bamboo-related development projects exist in the region, none have focused on producing sealed bamboo bottles using a replicable circular, community-driven social enterprise.

The initiative fosters collaboration along the value chain by involving rural artisans, local suppliers of bamboo, and Tiger Trail Travel, which provides training, tools, and market access. International educational institutions support the initiative by promoting awareness through service-learning programmes, acting as sales agents, and creating additional demand that supports both market access and community education funding. This co-creative model strengthens local economies and establishes a replicable model for sustainable consumption and production in the region.



### Circular Economy Impact

The Jungle Jar contributes to the circular economy by switching from non-renewable plastic for water packaging to renewable, biodegradable bamboo, a resource substitution. The product is presented as a refillable bottle that can be used repeatedly, illustrating resource circularity. Doing so, the Jungle Jar replaces the single-use plastic bottle with durable, reusable bamboo water bottles made from locally sourced bamboo. This substitution cuts plastic waste generation and plastic consumption, thereby reducing environmental impact from virgin plastic production and import into Laos as well.

At the current scale of implementation, approximately 500 Jungle Jars have been produced between 2023 and 2025, each with a capacity of 0.3 litres. On a typical 7-day biking tour, one Jungle Jar would need to be refilled around ten times per day and can replace approximately 35 0.6-litre plastic bottles per person (estimation based on the assumption that each guest consumes three litres of water per day). Moreover, the manual crafting of bamboo bottles is



a dry process carried out at ambient temperature, avoiding any significant environmental impact during the handcrafting of the bottles.

The land-use impact is positive: bamboo is a renewable resource that grows rapidly without requiring fertiliser or other agricultural inputs, and using it promotes sustainable land management and supports local biodiversity. The programme encourages sustainable harvesting practices, maintaining the health of bamboo forests. Furthermore, the initiative promotes the allocation of dedicated land for bamboo forestation, creating a self-sustaining supply of bamboo while preventing deforestation. Community school trips actively engage in bamboo planting and harvesting, turning reforestation into an educational and circular showpiece. Additionally, the rubber used for the bottle caps is sourced from nearby rural rubber plantations, reducing the need for new agricultural land and supporting the use of local resources.

## Business and market impact

The Jungle Jar initiative contributes to the village fund, thereby providing support and benefits to approximately 80 families in the village. Initial investments – including tools, training, and infrastructure – were provided by Tiger Trail and supported by community contributions, such as donated land. Operational costs are minimised by using local materials, shared infrastructure, and community-based labour.

For Tiger Trail, the shift to refillable Jungle Jars has resulted in direct cost savings. Instead of purchasing numerous 0.6-litre plastic bottles (which cost around LAK 45,000/€ 1.8 for 12 bottles), the company can now use larger 20- litre refill bottles (which cost LAK 30,000/€ 1.2 each). Each 20- litre barrel can replace approximately 33 plastic bottles, resulting in a cost saving of around LAK 93,750/€ 3.75 per barrel. This approach not only reduces water costs but also significantly cuts single-use plastic waste, contributing to the company's sustainability goals. Annual savings depend on the number of biking tours conducted per year, their duration, and the number of participants involved. For example, in 2024, based on company data for tour lengths and participant numbers, Tiger Trail would have needed to use an estimated 8,480 plastic bottles for these tours. Based on this, the company could realise annual savings of approximately LAK 24,093,750/€ 962 in water costs. All estimates are based on the assumption that each tour participant consumes three litres of water per day.

Since its launch in 2021, the initiative has scaled to multiple villages within a 40 km radius of Luang Prabang. From 2023 to 2025 around 500 jars were

promoted and sold through school-based fundraising, tourism-related retail, and on international markets via platforms like Etsy and eBay. Shipments of bottles to the United Kingdom are planned for 2026 to make them available in limited quantities across Europe.

Future plans include expanding school partnerships and replicating the model in other communities, positioning Jungle Jar for sustainable growth and broader social impact. Also, the non-governmental organisation (NGO) 'Husk' has expressed interest in taking over the programme and transforming Jungle Jar into a global brand, expanding its reach to other regions and countries with similar rural economic and environmental contexts. This offers significant potential to scale the impact of the initiative beyond Laos. One promising region for such expansion is Kerala Province in India, which presents strong potential for collaboration or replication.

## Stakeholders

The Jungle Jar initiative relies on close collaboration between multiple stakeholders. Around 10 families from Huay Fai and surrounding villages contribute directly to production, crafting the bamboo bottles using local materials. Community members – particularly women and older adults – received training, tools, and flexible work opportunities, enabling them to earn income alongside traditional farming. Tiger Trail plays a key role by providing technical support, managing logistics, ensuring product quality, and connecting producers to local and global markets.

International school initiatives support commercialisation through service-learning programmes and bottle sales that raise awareness and generate funding. These school partnerships not only help sell products but also build long-term connections between students and communities, enhancing cultural exchange and understanding.

Each bottle is sold for approximately USD 10, and of this, USD 3.50 goes directly to the producing family, providing meaningful supplementary income; USD 1 supports the village fund, contributing to community infrastructure and services; and another USD 1 is allocated to the construction of dormitories for high school students from remote areas. This educational support has already enabled several villagers to complete secondary education.

This circular model has created sustainable livelihoods in rural Laos without displacing existing jobs, and instead offers non-seasonal complementary income that strengthens economic resilience. It has also helped fund local education, creating long-term social impact by supporting youth in completing high school to help them break out of poverty.

## Implementation

Communities were motivated to participate in the initiative, with Huay Fai village donating land for a shared production space. Tiger Trail Travel supported the launch by providing essential tools, training, and access to both domestic and international markets. One initial challenge was the community's limited experience with quality-controlled production. This was effectively addressed through practical, hands-on training in bamboo selection, treatment, and product design.

Limited market access for rural producers presented another barrier. This was effectively mitigated through Tiger Trail's logistical support and strategic partnerships with international schools and global e-commerce platforms such as Etsy and eBay, both of which expanded visibility and demand beyond Laos.

While the initiative holds strong potential for replication in new villages and other Southeast Asian markets, several challenges persist. These include ensuring consistent product quality, managing logistics as production scales up, and addressing the seasonal nature of bamboo harvesting, which is limited to once a year. Moreover, bringing international school groups to Laos – crucial for awareness and sales – has become more difficult due to rising costs, logistical complexity, and global uncertainties. To address this, the project has begun selecting partner villages closer to Luang Prabang

to improve accessibility and reduce logistical barriers for visiting school groups. Additionally, a planned infrastructure project will eventually mean the relocation of production away from Huay Fai. Expanding to new villages is underway but will require time for training, trust-building, and setup. Nevertheless, the flexible, community-driven model remains resilient and well-positioned for sustainable growth and wider replication.

## Takeaways

The Jungle Jar initiative shows how traditional craftsmanship, local resources, and circular design can be combined to create sustainable, inclusive business models. By empowering rural communities – especially women and older adults – with tools, training, and market access, the project offers a replicable path to economic resilience and positive environmental impact. Key lessons include the value of community-driven development, the potential of educational partnerships to enhance market reach, and the importance of aligning business goals with social and environmental priorities. It serves as a practical inspiration for businesses, governments, and changemakers across the region. It also highlights how circular economy principles – using locally sourced, renewable, and biodegradable materials for durable bottles – can be effectively applied in low-resource rural settings to deliver both environmental and social value.



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## Disclaimer

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