

## **SUSTAINABLE, ZERO-WASTE PRACTICES IN THE CLOTHING INDUSTRY: A CASE STUDY OF TONLÉ, CAMBODIA**

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### **ABSTRACT**

Zero waste, in the current world is a plan method that wipes out squander at the conceptual stage. It is a way of thinking that supports the ideation of predefining and assessing life cycles of garments in a circular manner so that all items are consumed to fullest. The objective and philosophy followed is of cradle to grave i.e. no garbage to be shipped off landfills, incinerators, or the sea. The preservation of all assets through dependable creation, responsible utilization of resources, reuse, reduce, mindful production, packaging, and usage of shipping materials in total is considered as being sustainable. The product developed is highly impactful in reducing carbon footprint, methane emission definitely being less threat to environment and human being. The work environment, company policies, adhering to eco-friendly production process, reducing water and energy consumption, along with providing fair wages to workers and health benefits are few milestones achieved by the company as per US Sustainable development goals.

**Key Words:** Zero Wastage, Sustainable, Eco – friendly, Reduce wastage

### **INTRODUCTION**

“Gather up the fragments that remain that nothing be lost”- The BIBLE- John 6:12

Zero Waste Fashion refers to creating items of clothing in a sustainable way that generate minimal textile waste that is normally discarded during garment production. As per industry estimates, approximately 15 per cent of fabric targeted for clothing ends up on cutting room's floor and bins<sup>[1]</sup>. A mammoth of waste produced by the apparel companies all around the world ends their lifecycle in the landfill, incinerators and oceans. Making sustainable and organic apparels juxtaposed with minimal waste is extremely inescapable.

In the year 2008, with the help of funding from Fulbright grant, research scholar **Rachel Faller** shifted her base to **Cambodia** to study sustainable and fair trade textile. She recognised the lacuna between the market and ethical, affordable, sustainable fashion. To bridge this gap with fair trade practices, Rachel visualized commercially viable designs incorporating recycling techniques with indigenous materials. This humble vision involved local artisans, craftsman and generated employment opportunity amongst Cambodian women birthing **Tonle'** in 2009.<sup>[2]</sup>

The First store in Phnom Penh catered to tourist, expats and localities combining innovative thinking, aesthetics, functionality by recycling second hand textiles and clothing. Soon, Rachel discovered piles of cutting waste in all sizes, lengths and designs from garment factory. She restructured and reinvented her business model in the year 2013-14 and

proposed 100% Zero waste design. This business model was based on creating something substantial from trash or factory waste (Cash from Trash –Trashion)<sup>[3]</sup>.

The Sustainable practices adopted by Tonle' smartly combined the philosophy of creating garments from factory's waste fabric materials using creative pattern making techniques leaving zero wastage. The material sourcing is done directly from companies or remnant dealer's market.

The prime reason cited for this waste generation are :

- Cut pieces ( Fabric wastage created in cutting process during production)
- Quality Control failure ( rejection due to defective stitching, sizing, finishing etc)
- Overstock ( excess and leftover fabric )

Designer and stylists at Tonle' creatively use large cuts of remnant fabric to develop myriad styles. The leftover small scraps are cut and sewn together into yarn which are beautifully hand knitted or woven into jackets, shrugs, signature jewellery line and new accessory pieces. The little waste left from above two process is further mixed with waste paper generated from office and pattern making is mixed with sticky rice to create signature handmade paper for creating brand tags and packaging material . These steps leaves zero percent waste consuming every yarn of sourced factory scrap. Undeniably “ Waste isn't Waste until you Waste it”<sup>[4]</sup> . This ethical brand Tonle' creates an ecosystem providing impetus to circular economy challenges simultaneously meeting Sustainable Development Goals of United Nations at large<sup>[5]</sup>.

## **METHODS AND MATERIALS**

The secondary information assortment and the data is gathered from social media platforms, official website, reports by BBC and Huffington Posts, The ASEAN post, Blogs, personal interview, work of analysis, articles by The Guardian, writing overviews, Newspaper articles , audit articles, etc.

## **CRAFTING THE SUSTAINABLE CORE**

The tons and heaps of mass produced affordable fast fashion keeps churning environmental pollution, instigating irresponsible consumer behaviour. All this results in end of the season stock purge with increased carbon footprints. The philosophy of 'feeling good, looking good and doing good' at the same time made Tonle' stand apart from others. The team of 30 people employed at Phnom Penh workshop are responsible for the entire process from sourcing to production to shipping. They are privileged with fair wages (payroll system) and benefits, generous vacation packages, free lunches, team retreats, training opportunities. The other facilities includes timely departmental promotions, incentives, skill enhancement, health care benefits, autonomy (flexible working hours) making it comfortable and safe work place.

Tonle' also have transitional partnership and collaboration with Weaving Cooperative in Northern Cambodia. Here the talented, skilful and experienced artisan create exclusive textile

designs for the brand. Such commitment and action makes Tonle' adhere to the guidelines of World Fair Trade Organization <sup>[6]</sup>.

## CURATING SUSTAINABLE HOLISTIC PRACTICES

The constant search for reducing wastage and significantly cutting carbon footprints guides Tonle' to "Closed loop Recycling"<sup>[7]</sup>. The significant contributions and the journey includes:

- **Commitment to Fair Trade** : With fair wages, Equitable commercial terms, fair price and concern for social, economic and environmental well-being.
- **Transparency**: Aiming to be leaders in sustainable fashion movement, company has well disseminated financial information, management policies, sourcing information, production, marketing and development strategies amongst stake holders.
- **Working Conditions**: Abiding to local statutory regulations, safe work environment with benefits related to health care, self-development, skill acquisition etc are practised.
- **Ethical Issues**: Public accountability, fair employment, progressive work practices and commitment to justice are important aspects of company's profile.
- **Concern for People**: Focus on improving quality of life following sustainable practices for fair trade, environmental benefits safeguarding vital rights of indigenous clan.
- **Equal employment opportunities**: Ensures employment irrespective of caste, creed, cultural or gender bias.
- **Concern For the Environment**: Production of environmental friendly sustainable goods with zero percent wastage is the Vision and Mission of Tonle'.
- **Respect for producers Cultural Identity**: Involvement of local artisans, craftsman imbibing cultural and tradition helps preserving the virtues and identity.
- **Education and Advocacy**: Promotes fair trade by encouraging people alter consumption patterns based on social and environmental grounds. Host regular programmes to create consciousness regarding the same.

## SUSTAINABILITY FRAMEWORK: ATTENTION TO NUTS AND BOLTS

Tonle' ensures holistic approach and maintains transparency in their business model. The prime focus, strategies , organisational and business decisions are based on long term perspective with sustainability as core value. Ensemble with Tonle' tag promises maximum social benefit and smallest environmental footprint. Analysis of Zero waste production process involves:

**Handmade**: All the products are hand knitted, hand woven and refrain usage of machinery and electricity. The resultant garment though time consumingly constructed, display unique handmade touch and is kind to the planet .

**Trimmings:** The button, beads, threads, etc are sourced locally from organisations who adhere to follow fair trade practices.

**Textiles :** Tonle’ partners with local weaver centre called “ Weaves of Cambodia”. The community centric environment, fair wages, regular training and workshop ensures creation of signature zero waste textiles.

**Dyeing:** The 100% natural, non-toxic dyes are developed from soymilk and lemon. The leftover solution is used as fertilizer in the garden.

**Screen Printing:** The non-toxic water based inks and dye pastes are used to give cohesiveness, vibrancy and signature design element to the collection. Rachel Faller design motifs for hand prints which are further developed into screens .

**Hardware:** Zippers, snaps, closures like buckles, pendants are ethically hand- carved from reclaim wood scrapes. Ceramic products used are handmade from locally dug clay and ensures decent wages and benefits to artisans.

**Packaging:** Shipping bags, Tags are made from 100% recycled materials. Rice sacks are recycled in re-usable totes used for shopping trips. Recycled light weight tissue paper is used for gift wrapping<sup>[8]</sup>. Tonle’ ensure reduced bulk by using shipping mailers(lower carbon footprints) along with minimum consumption of plastic and cardboards.

**Solar Power:** The Tonle’ workshop uses Solar energy which is highly economical and saves carbon emission.

**Globalization:** Tonle’ operates flagship store in San Francisco, US. Its wide range network focusing on wholesale comprises of above 150 partners in Europe, Japan, Australia, New Zealand, South Africa, Canada etc along with online shopping platform and a well updated company’s official website.

## VOLUMES VALIDATING SUSTAINABILITY

Tonle’s core business model is built around sustainability<sup>[9]</sup>. The process of rerouting and reusing materials has contributed substantially by diverting 16,000 kgs of material waste dumped in landfills , carbon emission in the atmosphere is reduced by 495,000 kgs, 200 million litres of water is saved and pesticide consumption is reduced by 12kgs<sup>[10]</sup>. This also prevents emission of greenhouse gas methane (by decomposition of fabric waste) contributing to Global warming <sup>[11]</sup>.

The company’s HR policy of assigning limited working hours, competitive wages, having safe working environment, nil exposure to harmful chemicals, health care measures, abiding to labour laws are praiseworthy.

Tonle's official website is well equipped with garment care instruction of individual piece giving it mapped lifecycle and longevity. The company plans to expand its horizons by launching takeback programme in order to close the circular fashion loop fully and truly.

The brand is focussed on sticking to simple basic neutral tones of colour like Navy blue , Black, Grey, Cream in cotton jersey material. The sourcing department ensures that the material sourced is easy to hand sew and seamlessly gel together though coming from different sources. The collection is designed keeping in mind the limited meterage of available factory scrap hence limited number of production pieces<sup>[12]</sup>.

Bootstrapping a business with limited funding was really difficult initially. The virtue of doing business ethically and sustainably makes the garment pieces slightly more priced as compared to other competitive unsustainable brands in the market <sup>[13]</sup>.

The future planning includes expansion of brand beyond Cambodia with potential production partners, ethical firms and organisations. The concept of reusable packaging options that can be shipped back to the brand and reused many times are also under consideration. Increase in sales graph to justify the pricing and ensure long term sustainability is the need of the hour along with inspiring other stakeholders of fashion industry to develop zero wastage concept for greener planet and environmental support<sup>[14]</sup>.

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