FUTURE17
Sustainable Development Goals
Challenge Program

t-hues
Naturally Vibrant

**Organisation**:

T-Hues is a Natural Dye made from Tea Waste generated from Ice tea Manufacturing Process at Unilever Ice tea Factory in Sri Lanka. This is a 3 year collaboration between Sri Lanka Institute of Nano Technology (SLINTEC), Unilever and Company Dynawash.

Tea is the second largest, export earning of Sri Lanka exports, accounting over 1.9 Billion US$ in 2017. On average, about, 350 Metric Kg of high quality, black tea is exported each year. During this process, about 30,000 MT (per annum) quantity of tea rejects namely BMF (Broken Mixed Fannings); small bits of tea that are left over after higher forms of tea leaves are gathered are generated. Approximately 10,000 MT of this BMF is used to generate instant tea. ***And rest of 20,000 MT is discarded as waste material***. Further, it is interesting to note that by using, 10,000 MT of BMF, Sri Lanka has become the main sourcing unit on the world instant tea market, accounting for close to 50% of the global supply of the Ready to Drink volumes sourced from Pepsi Lipton International. Further, during the instant tea manufacturing process, there is a huge quantity of tea waste generated, regarded as second generation waste in this document.

**Project title:** T – Hue - Ecofriendly, Natural Dying Using Tea Bio-waste

**Project objectives:** The aim of the current invention was to offer a dying method utilizing the tea waste material every bit a natural coloring agent for fabrics. SLINTEC has come up with a sustainable natural dye solution, using first generation tea waste, produced during instant tea manufacturing process. The huge amount of cost incurred for synthetic dyes, and its risks and environmental impact can be minimized using the developed technology, as metallic hazardous, chemical dyes are substituted, by non-toxic, biodegradable and eco-friendly natural dyes to the Sri Lankan textile industry. Advantages of using tea waste are a continuous supply chain of raw material, thus excluding the major concern with regard to readily availability of natural dyes; uniformity of the raw material; and ready-to use a soluble powder or liquid concentrates just like synthetic dyes. Another advantage of using natural dye obtained from a bio resource categorized as a “waste”, is that it reduces the accumulation of waste material in the environment by reuse of them leads to cleaner and healthier environment while saving the cost of handling and discharging the waste.

**Expected Outcomes:**

1. A process for dyeing fabrics and textiles selected from the group consisting of cotton, linen, nylon, wool and polyester and their blends thereof with required fastness properties using a natural dye obtained from tea waste. The natural dye has antimicrobial, as well as UV protective properties.

2. Further this technology has enabled, both the reduction of water consumption and dying time from 15- 50%, depending upon the fabric (nylon or cotton), and thus increasing the dying efficiency, and ultimately also reducing the waste water disposable cost which results in cleaner production, with greater social and economic benefits.

3. It also assist in the reduction of C foot print, by using, a bio resource categorized as a “waste”, (both first generation and second generation). The positive outcome of this research finding is beneficial for both industries, namely textile and tea, as it reduces the accumulation of waste material in the

environment by reuse of them leading to cleaner and healthier environment while saving the cost of handling and discharging the waste.

**Deliverables:**

Report with recommendations on entering the US market - legal and economical scan

**Is this project reoccurring?**

No

**Would you like for this project to be delivered by more than one team?**

Yes - 2 teams

**Which sector is this project focused on?**

Waste Management

Manufacturing

Research

**Which skills might be required for the successful delivery of your project?**

Business & Entrepreneurship / Business Development

Research - Lab research

**Can the project outcomes be shared with the public?**

Yes/No

**SDGs related to this project:** SDG# 6, 9, 13

**Resources available to the team:**

1. https://www.youtube.com/watch?v=KC-pD0RKrsM
2.

**Contact person:** Saatchi Doshii, saatchi.doshi@fashionforgood.com

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