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## Untwining coir: understanding the coir industries in Kerala

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## Relating Systems Thinking and Design (RSD12) Symposium | October 6–20, 2023

### **Untwining Coir: Understanding coir industries in Kerala**

**Abhijith Sasikumar and Rachel Mary Rajan**

Kerala, the southernmost state in India, is known for its vibrant tourist destinations, exceptional healthcare, literacy, socio-economic well-being, and ecological diversity. But Kerala trails behind many other states when it comes to industrial development. This is ironic, considering the state was once the pioneering industrial region within the country. The gradual decline of industries in Kerala is due to several reasons, including policy changes within the state, lack of resources catering to large-scale industries, and other incentives to start new industries, just to mention a few. This map takes a closer look at readily and locally available raw materials to boost the industrial strength of the state. While looking at potential raw materials, two were mainly identified, namely coir and water hyacinth, abundantly available in Kerala. 61% of the entire coir produced in India is made in Kerala (MSME), while the invasive species water hyacinth is a major threat to water bodies in the state, coming second only to Assam. These make either of these natural fibres a potential raw material for industries.

**KEYWORDS:** coir, Kerala, coir industry, coconut husk, golden fibre

**RSD TOPIC(S):** Economics & Organizations, Mapping & Modelling, Methods & Methodology

## **Context**

Several articles and reports have been published over the years showing a gradual but steady decline in the once flourishing coir industry, with the latest online report even shining a light on situations where industries are even leaving the state. Kerala once used to be the monopoly in all aspects of the coir sector, from the production of raw materials to the manufacturing of end products, but over the last few decades, this has changed drastically due to several social, economic and political reasons.

This research tries to understand the reasons for this and arrive at a potential solution to some identified problem areas. Initial system mapping was done based on secondary research, which helped us identify gap areas. To further verify our gap areas and find other opportunities, we then conducted case studies of various cooperative societies, factories and production units. Our system design study also used other research methods like interviews, surveys and observation. This helped us gain further insights into the context, users, and stakeholders such as workers, industrialists, policymakers, government employees, salespeople, etc. This then led to designing various possible solutions through system thinking and design.

## **Map description**

The gigamap for Untwining Coir shows a brief history of Kerala and presents the graph line for the industrial growth of Kerala, which is also a metaphor for the topography of Kerala. The gigamap showcases the whole journey of the golden fibre from the coconut groves to the products, reaching various end users. The map envisions the whole system reimagined with new solutions plugged into the existing framework in order to majorly uplift the current small and medium-scale coir industries of Kerala's coir sector (Figure 1).

## **Proposed possible solutions**

The data was analysed using different methods such as stakeholder mapping, system mapping, cause and effect mapping, material explorations, process experiments, etc. This led us to understand that the problems of the coir industry cannot be resolved by intervening in one area; they have to be a multi-level approach with hard, soft, and

long-term interventions. Based on the study conducted, three potential areas where potential interventions could positively affect the industry were identified. One of the main problem areas was the lack of an effective collection system for husks, which made Kerala completely reliant on Tamil Nadu for husks. However, ensuring the availability of husks for workers in Kerala is also insufficient. An effective marketplace is necessary to ensure the artisans have sufficient working days throughout the year. Currently, the 'innovative and eco-friendly' material from coir is coir composite boards, a combination of coir fibre and phenol formaldehyde resin. The properties of coir allow the possibility of creating a more eco-friendly material alternative to plywood or particle board. This material could revive the struggling Public Sector Units under the Coir Board. These various solutions were explored at multiple levels and are in the process of testing and explorations, requiring further study and experimentation.

## **Reference**

1. Ministry of Micro, Small & Medium Enterprises. (n.d.). Coir Board, Coir—Fibre of Future/ New Age Fibre. <https://msme.gov.in/coir-board>

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