

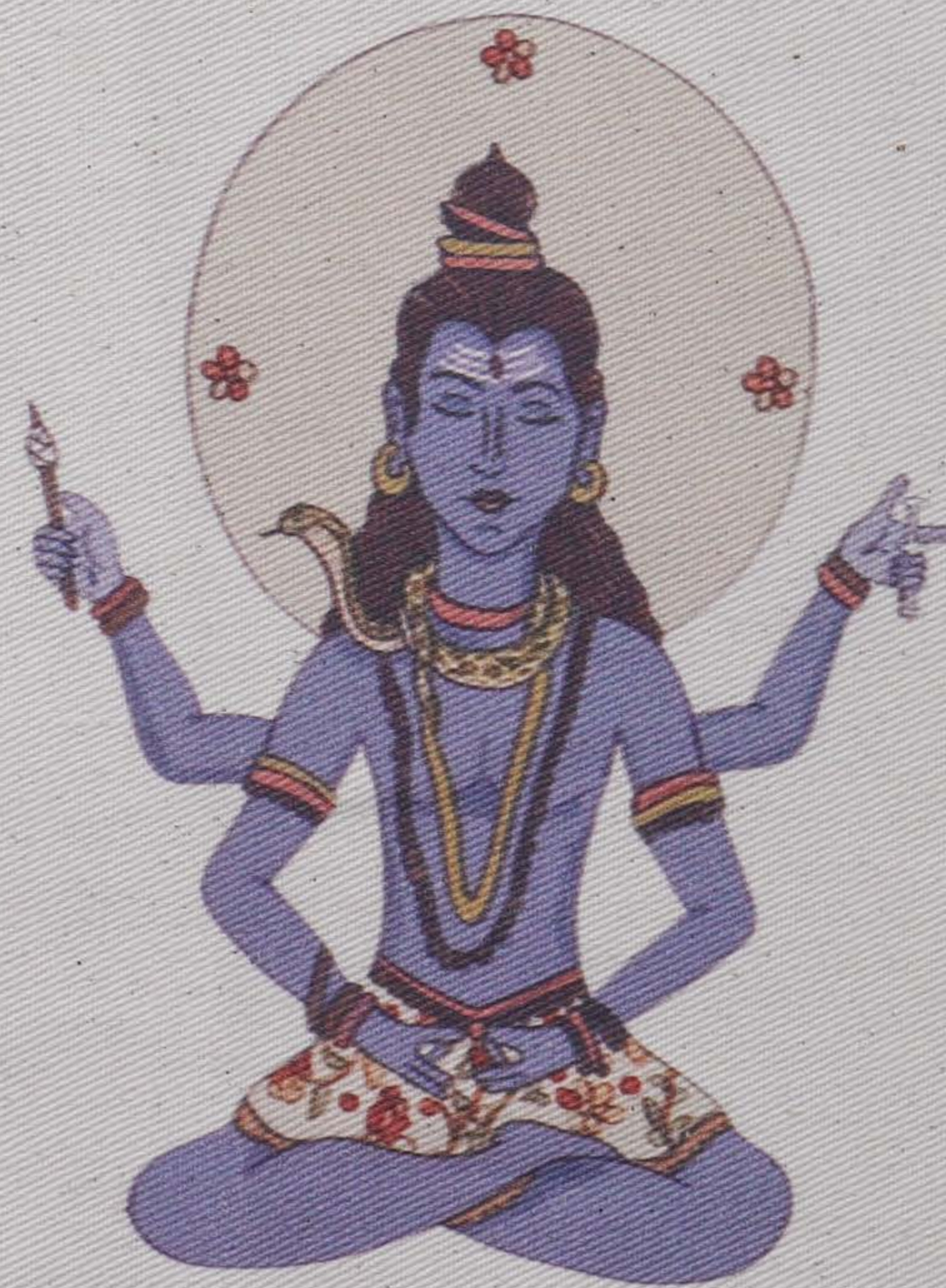
Decolonial

Textile



Futures

A NEW FRAMEWORK
FOR MATERIAL INNOVATION



VIBHUTI AMIN
MAY 2026

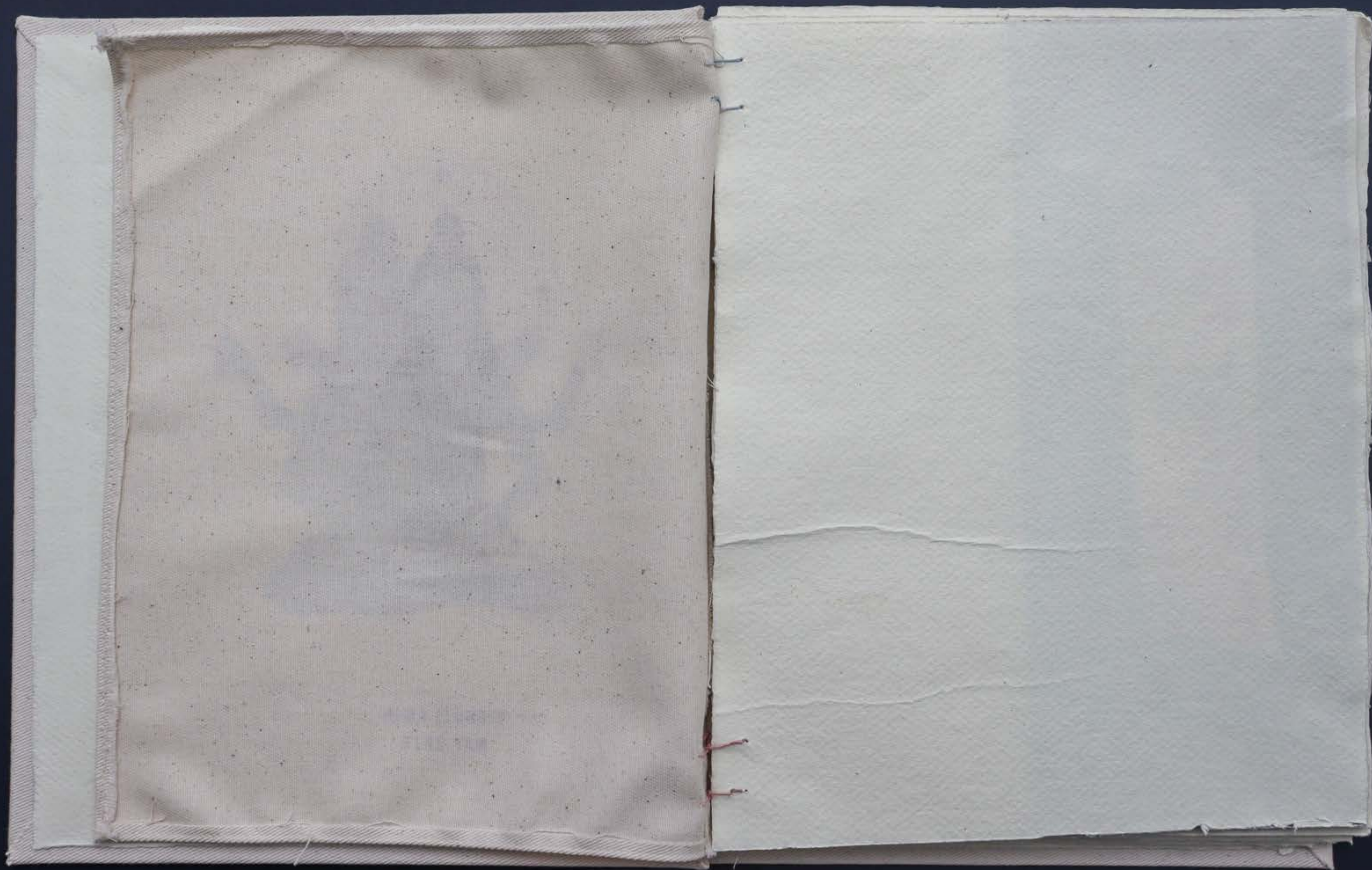




Image by The Ruta Film
Artisans with Nafaskāri (a film)
Sri Kalahasti, India

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Image by The Ruta Films

Introduction

Long before innovation was extracted, patented, and globalized, it was place-based.

Fashion was born within village ecosystems, where artisans shaped material futures through an intimate dialogue with their environment. On India's Coromandel Coast, the craft of Kalamkārī, a hand painted dyeing technique, thrived for over three millennia. It was sustained by local ecologies and the interwoven labour of weavers, dyers, and printers living in proximity within craft clusters (Sengupta, 2019; Chamarty, 2024). These practitioners were not anonymous labour at the end of a supply chain; they were the authorities over material, process, and creation.

Today, many of these ecosystems are collapsing. Craft traditions face extinction, local biodiversity is vanishing, and global inequalities are intensifying. The very communities that historically sustained the material innovations that built the fashion industry now disproportionately face the impacts of the climate crisis (Amin, 2026).

Yet, the global fashion system continues to reward speed, scale, and exploitative production.

This workbook serves as a pause.

It is an invitation not simply to slow down, but to critically examine the historical systems fashion has inherited, and to consciously reshape the future we are building.

To guide this unlearning and rebuilding, this workbook proposes a three-part journey:

1. **Historicise** the colonial inheritance of a textile or craft
2. **Ecologise** the current social and environmental landscape, shaping it today
3. **Regenerate** through interventions that restore cultural, ecological, and material sovereignty.

Modern fashion is built upon colonial legacies of extraction, which we must now historicise. Under empire, textile trade routes reorganized land, labour, and knowledge for profit. Motifs were appropriated, fibres were commodified, techniques were industrialised, and self-sustaining craft communities were systematically dismantled. As Céline Semaan argues, design has long functioned as a "handmaiden of empire," a mechanism through which hierarchies were enforced, and systems of domination materialised (Semaan, 2025).

The colonial imposition of Western market structures onto communities whose pre-colonial ways of life were "irreducible to profit" permanently disrupted the interwoven craft clusters that sustained these textile traditions for generations (Chamarty, 2023, citing Azoulay, 2019). As Semaan pointedly observes, "colonialism is not a thing of the past, it's an economic reality" (Semaan, 2021). Today, this reality is simply repackaged through the language of "sustainability."

If this is the inheritance of design, then the question becomes: What would innovation look like if it began from repair rather than extraction?

Place-based innovation offers one response.

It asks designers, scientists and researchers to begin with geography, both natural and social. It positions nature not as capital, but as co-creator, recognising that climate justice and social justice are inseparable (Amin, 2026). As E.F. Schumacher noted decades ago, meaningful technological progress demands tools that are accessible, suitable for small-scale application, and compatible with the human need for creativity (Schumacher, 1973). Only through this lens can we build a lasting, nonviolent relationship between people, technology, and nature.



Image by The Ruta Films & Vibhuti
Traditional kalamkari painting & final piece

Throughout these pages, my work *Nafaskāri* serves as a guiding case study. It explores this framework through Kalamkāri, a craft transformed into chintz under colonial rule, becoming the world's first "mass fashion" and symbol of extraction from the Global South (Amin, 2026; Chamarty, 2024). *Nafaskāri* reimagines this endangered craft's future through a climate-resilient material intervention: microbial dyes cultivated from local soils. Rather than replacing craft, the project asks how innovation might emerge from the same ecologies that once sustained it as an adaptive tool for the next generation of artisans.

Meaning "breath work," *Nafaskāri* is an invitation to breathe, repair, and return.

Innovation without context risks repeating the very extractions that built this industry. If we want a truly regenerative fashion future, innovation must be place-based, rooted in care, reciprocity, and accountability to the people and ecologies that make fashion possible. The next generation of materials cannot emerge only from sterile laboratories or corporate boardrooms; they must emerge from riverbanks, farms, dye pits, and workshops.

They must come from the places where ancestral knowledge and ecological wisdom already reside.

This workbook is an invitation to question what we know, and to design with place.



01

THE COLONIAL INHERITANCE OF DESIGN

Image of Christ (Kalamkari hanging of printed and
painted cotton, made by Sri Jonnalagadda
Gurappa Chetty, Kalahasti, ca. 1980)
Taken at the V&A East Storehouse, London



Images by The Ruta Films
 Bridge in Srikalahasti, India, built by the British East India Company for exports of kalamkari

Looking Back to Look Forward

For the last five centuries, design has served as a tool of power. It assumed infinite access to land, labour, and raw materials, access made possible through conquest, enslavement, and resource theft. While capitalism explains consumer culture, colonialism explains its geography: determining whose lands were extracted from, whose labour was exploited, and whose lives were rendered disposable in service of production (Semaan 2025). To understand contemporary fashion, we must first understand this inheritance.

Nowhere is this more visible than in the history of textiles.

Textile Trade and the Architecture of Empire

The common narrative of the Industrial Revolution describes a natural, progressive evolution from hand to machine. It was a calculated deindustrialisation of the Global South (Chamarty, 2024). In the eighteenth century, India was the textile superpower of the world, producing fabrics like Dhaka muslin that were so technologically advanced that European machines simply could not replicate their quality. To secure a market for inferior Lancashire cotton, the British East India Company coerced rather than competed. They imposed crippling tariffs of up to 80% on Indian imports while simultaneously flooding Indian markets with duty-free British goods (Fee, 2020).

Through extortionate taxation, forced labor contracts, and deliberate legislative control, self-sustaining craft communities were systematically dismantled. This was the birth of industrial design as a tool of control. It replaced the sovereignty of the artisan with the standardisation of the factory, establishing a geographical hierarchy that still places the "Designer" in London or Paris above the "Maker" in Bangladesh. As Céline Semaan reminds us, "the communities most impacted by extractive design have been excluded from shaping its direction" (Semaan, 2025). This exclusion is not accidental; it is foundational.

Images by The Ruta Films
Traditional fabric treatment in milk by Srikalahasti artisans



The Geography of Harm: From Extraction to Disposability

These colonial legacies have not disappeared; they have evolved into the linear model of modern fashion. Today's "green" innovation often remains rooted in the same extractive frameworks, repackaged through cleaner aesthetics (Semaan, 2025).

We see this at both the beginning and the end of the global supply chain. At the point of extraction, the surging demand for "affordable luxury" cashmere has forced Mongolian herders to drastically overstock goats, driving the desertification of 70% of the country's grasslands and destroying nomadic sovereignty (UNDP, 2021). At the point of disposal, the system relies on distant hinterlands to hide the consequences of overproduction.

In Ghana's Kantamanto Market, millions of unsellable garments arrive weekly as Obroní Wawu, "Dead White Man's Clothes," turning the Global South into a de facto waste management strategy (The OR Foundation, 2023).

Whether it is the overgrazed steppes of Mongolia, the choked markets of Accra, or the chemically polluted Swarnamukhi River in Srikalahasti, the blueprint is identical. The culture of hyper-production and disposability depends entirely on the continued designation of certain geographies and communities as sacrifice zones. It is a system built on "scaling up" at the expense of local ecologies.

To break this cycle, material innovation cannot simply seek newer, greener materials to extract. It must look inward, shifting toward small, local, and culturally rooted interventions.



Repairing the Narrative

Even as the design industry pivots toward "sustainable" approaches, it remains deeply reluctant to name its complicity in colonialism. Sustainable design discourse often centres the Global North, ignoring how climate collapse disproportionately impacts regions historically subjected to imperialism. Without naming the roots of harm, we risk reproducing them in more refined forms. To truly decolonise design, we must move beyond aesthetics and toward structural repair. We must recognise that craft is a form of intellectual property that has been historically appropriated; that land has limits; that labour is inextricably linked to culture and ecology; and that waste is a choice made at the drawing board.

Only by confronting this inheritance can design shift from a tool of extraction to a practice of repair.

Activity 01: Historicise

Tracing the Colonial Inheritance of a Textile

Objective: Before we can design for the future, we must locate ourselves in the past. This activity asks you to uncover the hidden histories embedded within a single textile or craft. By tracing its origins, movements, and transformations, you will begin to recognise how material design is shaped by systems of global power.

1

Select the Artifact

Choose a textile, garment, or craft practice to investigate.

- A material you wear daily (e.g., denim, silk, cashmere, cotton)
- A traditional or heritage craft (e.g., block printing, weaving, embroidery)
- A contemporary "sustainable" material (e.g., bio-leather, recycled polyester)

Your selected material: _____

The Geography of Origin

Innovation begins in place. Trace this material back to the soil.

2

- Where was this textile or craft born?
- What specific landscape, river, or climate sustained its creation? (Note: If your material is synthetic or lab-grown, where do its chemical feedstocks or agricultural nutrients come from?)
- What community or culture holds the ancestral knowledge of this practice?

Prompt: Describe the original, unbroken relationship between this material and the ecosystem it emerged from.

The Anatomy of Making

3

Examine the physical reality of how this material comes into existence.

- What raw materials are required? (Are they grown, mined, harvested, synthesised?)
- How are these materials transformed from raw fibre to finished goods?
- Is this process tied to natural rhythms (seasons, monsoons, harvests), or industrial speed?

Prompt: Map the lifecycle. Draw or write the journey from Raw Earth → Finished Artifact.

4

The Architecture of Movement

Textiles have always travelled, but how they travel reveals who holds power.

- How did this textile leave its original geography?
- Was its movement an act of equal cultural exchange, or of colonial extraction?
- Who controlled the trade routes or managed the supply chains that moved it?

Prompt: Trace the global journey of this textile. Mark where it was extracted, processed, and ultimately consumed.

The Mechanics of Power

5

Analyze how your chosen textile was altered to serve new markets.

- The Material: Were local, regenerative fibres replaced by cheaper, industrialised substitutes?
- The Aesthetic: Were sacred or cultural motifs adapted, diluted, or appropriated?
- The Power: Who profited from these transformations? Who lost their livelihood?

Prompt: Write a ledger. What was gained, what was lost, and for whom?

6

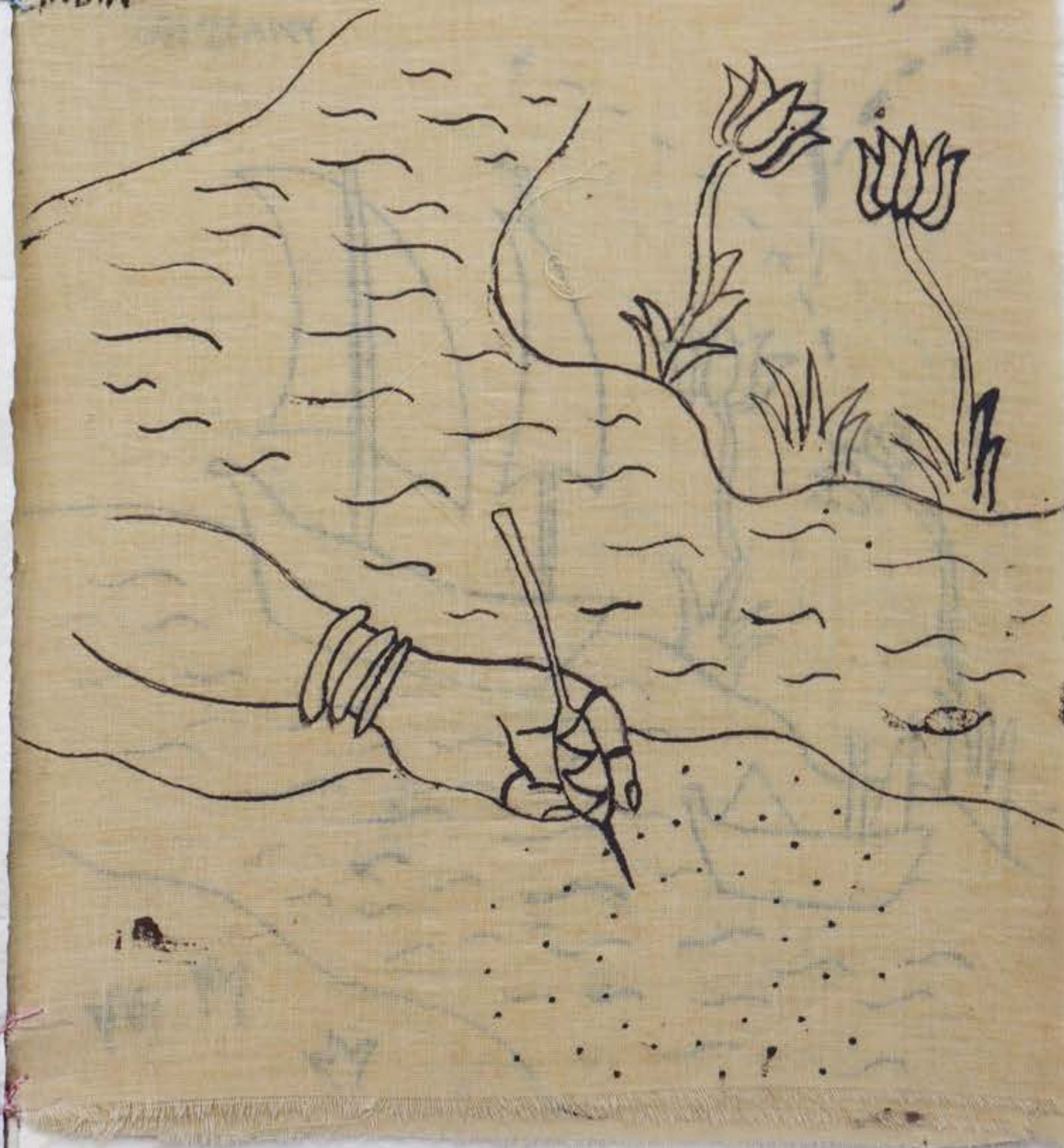
Name the Inheritance

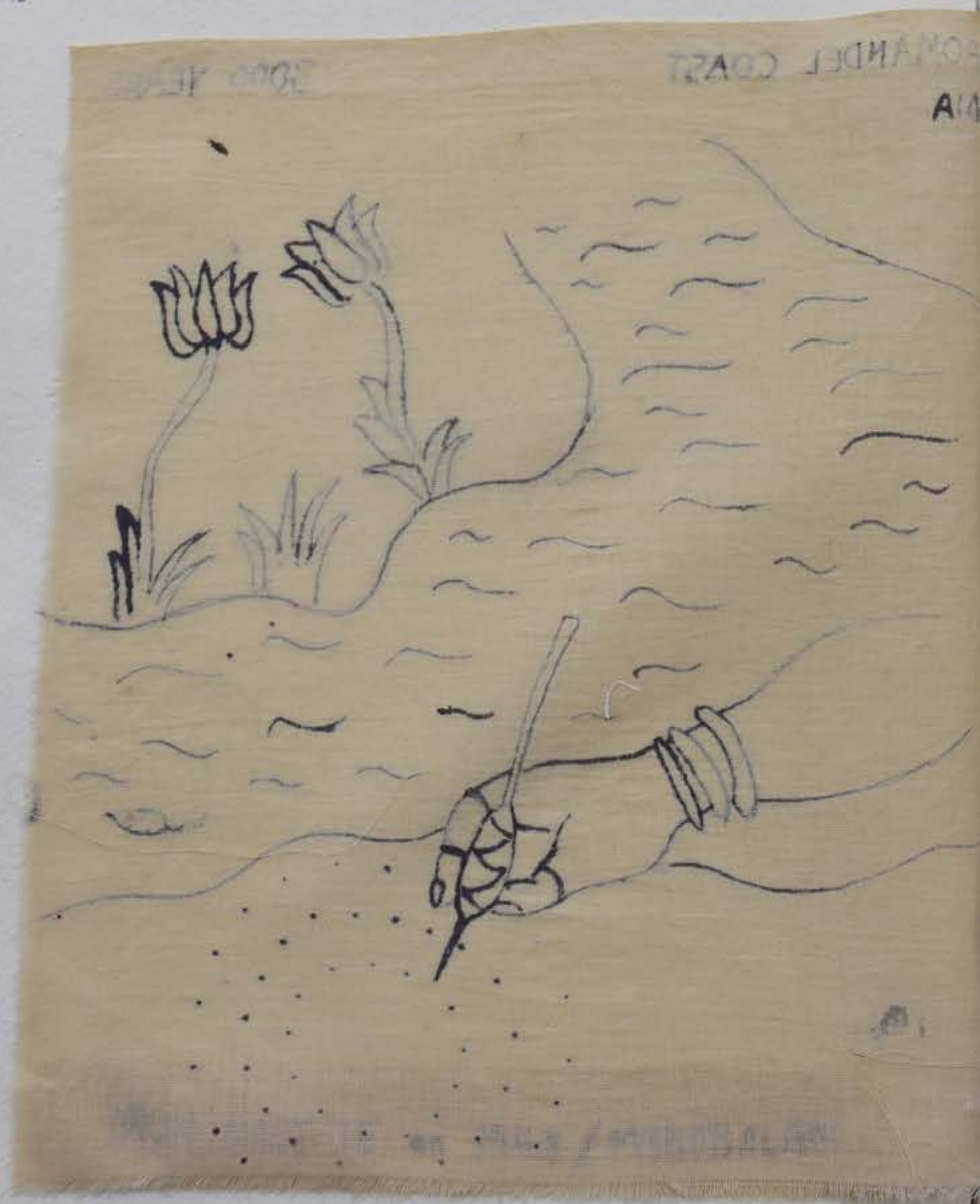
Step back and look at the map, the lifecycle, and the ledger you have just created. What does this specific textile teach you about the colonial inheritance of the broader design industry? If you were to work with this material today, what history are you actively inheriting?

IRON ACETATE on MILK / MYROBALAN

COROMANDEL COAST
INDIA

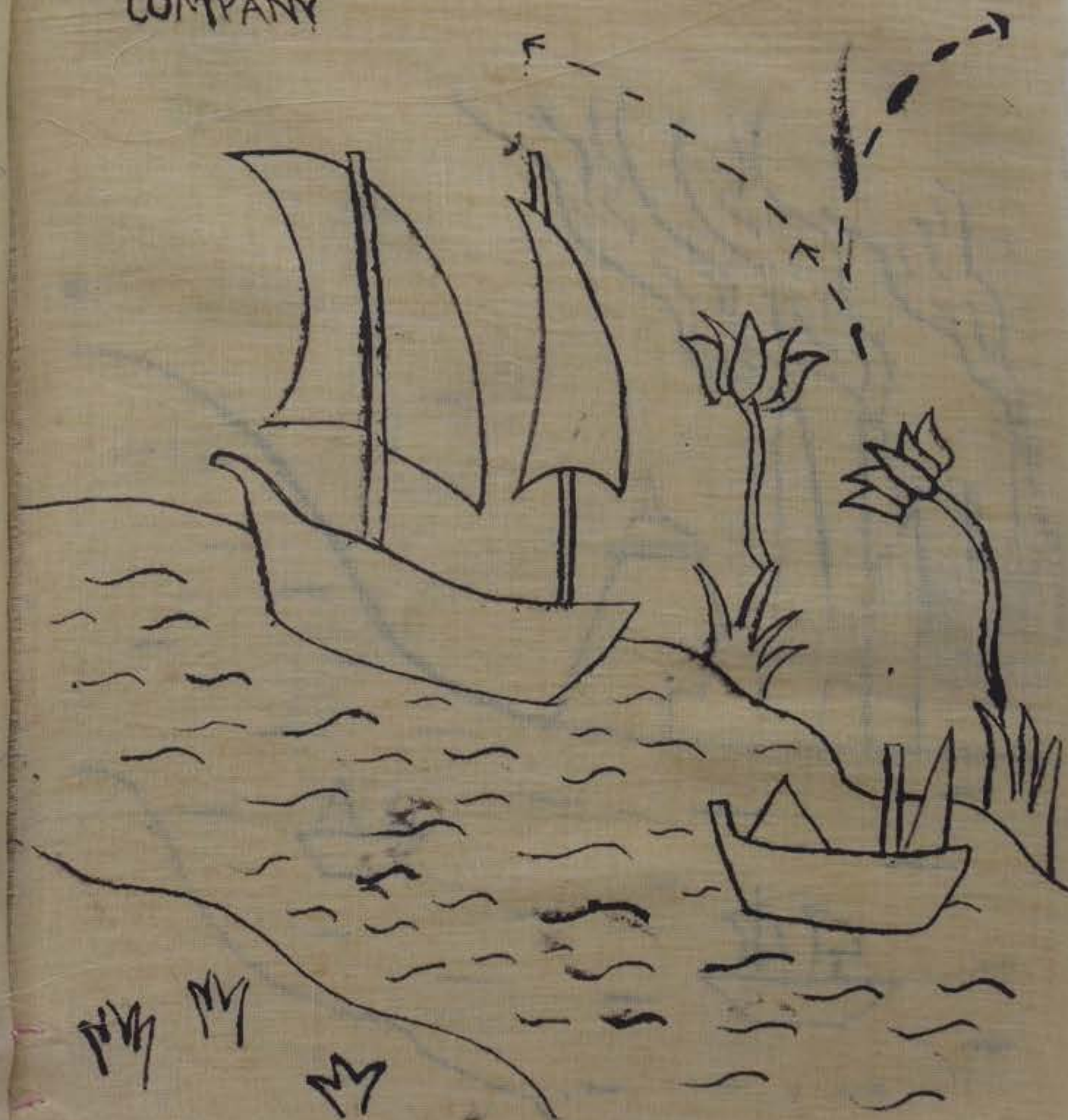
3000 YEARS

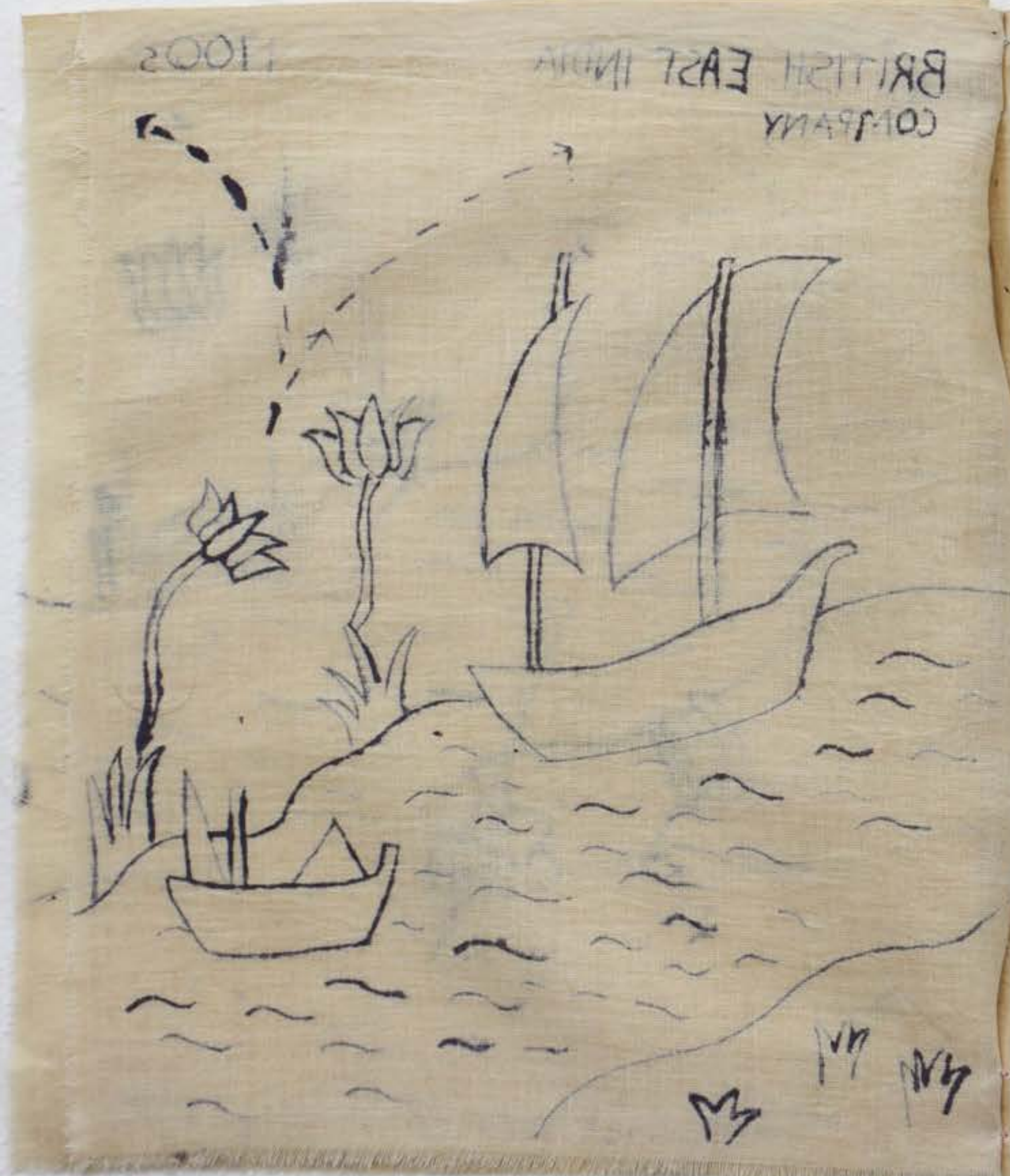




BRITISH EAST INDIA
COMPANY

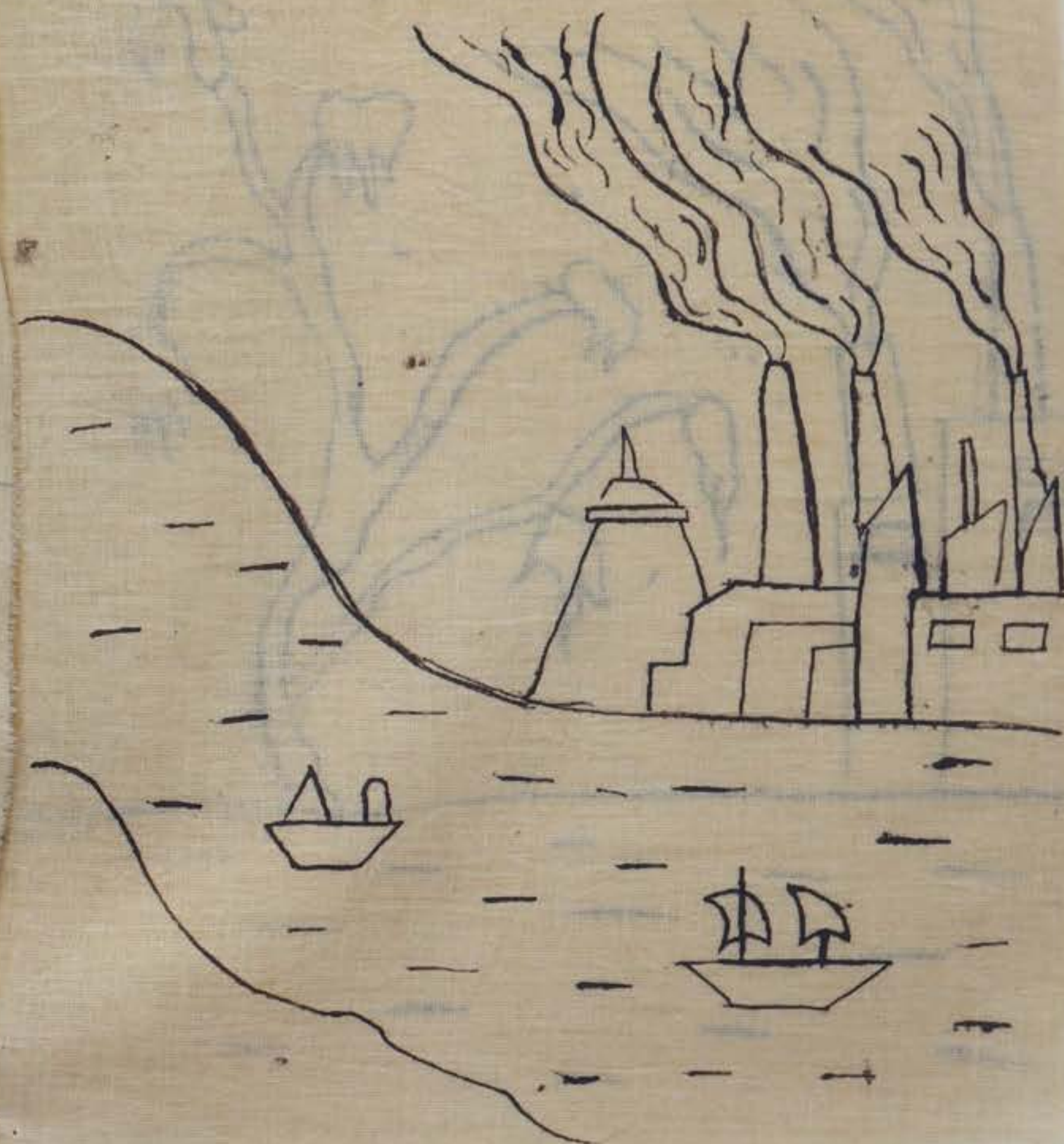
1700s





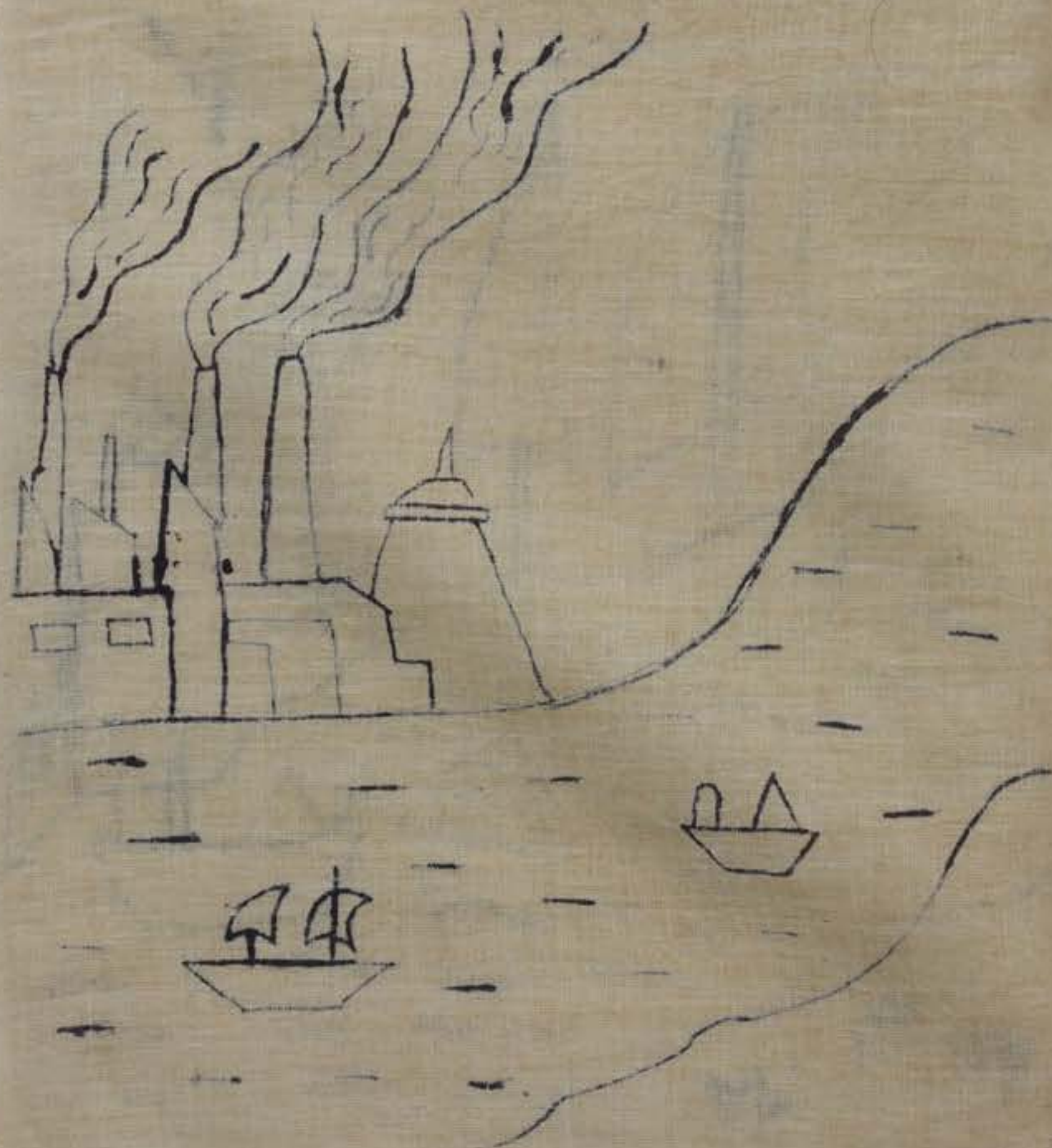
INDUSTRIALISATION

1800s



2003/

INDUSTRIALIZATION



EXTINCTION OF KALAMKARI

1900s





02

THE PLANETARY DEBT OF DESIGN

*Image of garbage on the banks of Swarnamukhi
River, Srikalahasti, India*



Images by The Ruta Films
Kalamkari with myrobalan dye



Images by The Ruta Films
Kalamkari with bacterial dye

From Extraction to Collapse

If the colonial inheritance of design explains how extractive systems emerged, the current ecological landscape reveals who, and what, is forced to pay for them.

The global fashion system continues to rely on a geography of "extractive zones," regions systematically reduced to their raw materials and cheap labour, where ecological ruin is treated as an acceptable byproduct of global capital (Gómez-Barris, 2017). Today, this dynamic manifests as climate colonialism. The Global North drives the vast majority of emissions through hyper-production, while the Global South disproportionately faces the frontline consequences of climate collapse. In manufacturing hubs and craft clusters across India, the artisans who have historically sustained the industry's material innovations now require urgent climate adaptation to survive extreme heat, drought, and water toxicity (Amin, 2026). To truly design for sustainability, we must design for and with these frontline communities.

The More-Than-Human Debt

The colonial project did not merely exploit human populations; it fundamentally redefined the natural world. In pre-colonial craft systems, artisans operated through a relational philosophy, treating materials, soil, and rivers not as resources, but as active participants, or kin, in the design process.

Colonialism violently severed this intimacy. It imposed a worldview that separated "humanity" from "nature," reducing the intricate, living web of the more-than-human world (Abram, 1996) to dead capital waiting to be extracted (Escobar, 2018). The fashion industry's current ecological crisis is the direct, inherited result of this ideological shift. When a design system views a river simply as a wastewater drain, or a forest simply as a timber yield, planetary collapse becomes a programmed feature of the supply chain. It inevitably destroys the livelihood, culture, and physical safety of the surrounding communities. The destruction of the more-than-human world is the direct weapon of social dispossession.

To decolonise fashion, we must shift our framework toward interspecies justice (Amin, 2026), recognising that human survival and liberation is entirely tethered to the restoration of the botanical, mineral, and microbial worlds.

Images by The Ruta Films
Traditional fabric treatment in milk by Srikalahasti artisans
Swarnamukhi River, Srikalahasti, India



Epistemicide and the Loss of Ecological Intelligence

The disappearance of traditional craft is often mourned merely as a cultural or aesthetic loss. In reality, it is a profound scientific one, representing the erasure of highly specialised material expertise that was deeply attuned to its environment (Sengupta, 2019).

Before industrialisation, textile systems were intimately embedded within local ecosystems. Natural dyes, hand-processes, and local fibres were not just aesthetic choices; they were highly evolved adaptive strategies developed in response to ecological limits. Indigenous and traditional craft practices represent a distributed database of survival: intergenerational knowledge accumulated over millennia on how to produce within planetary boundaries without causing ecological collapse (Williams et al., 2020).

When industrial systems replaced local craft with standardised manufacturing, they did not simply increase scale; they displaced entire knowledge systems. Decolonial scholar Boaventura de Sousa Santos defines this erasure as epistemicide—the systematic destruction of indigenous, local, and non-Western ways of knowing by dominant, imperial paradigms (Santos, 2014). When a craft like Kalamkari is severed from its local ecology and industrialised, we lose the blueprints needed to navigate a resource-constrained future. What colonial systems dismissed as “unscientific” or “primitive” actually represents the exact place-based material intelligence necessary for our survival (Sengupta, 2019).



The Collapse of the Swarnamukhi

Nowhere is this tension more palpable than in Srikalahasti, the historical heartland of Kalamkari. Traditional dyeing is an alchemy of water, entirely dependent on the mineral composition and flow of the Swarnamukhi River.

Today, the fragile equilibrium between artisan and environment has been disrupted. The extreme climate realities of Andhra Pradesh have transformed the physical landscape of the craft, turning the environment itself into a site of occupational hazard. As designer Archana Jaju observes, escalating summer temperatures, which now regularly soar past 45°C, create “uncomfortable working environments for our artisans, resulting in fatigue, dehydration, skin ailments... and an increased risk of mold growth” on the textiles themselves (Ahuja, 2024).

This demonstrates how climate colonialism operates at a somatic level: the ecological crisis directly attacks both the physical bodies of the makers and the material integrity of their craft. Driven by the unpredictability of this changing climate, alongside the global market's relentless demand for speed, many artisans have been forced to shift to synthetic dyes. This forced adaptation has resulted in dermal exposure to toxic heavy metals for the artisans (Oginawati et al., 2022), and the severe chemical pollution of the very riverbeds that once gave Kalamkari its life (Venkatakrisnaiah et al., 2013).

*To understand the true cost of this
epistemicide, we must listen to the people
standing by the river.*



Dr Jonnalagadda Niranja

A 4th-generation Kalamakari artist from Srikalahasti.
Founder of the Kalamkari Research and Training Centre.

*"Kamala Devi Chatopadhyaya came all over India
and she found my grandfather in Kalahasti. She
asked him to start kalamkari again here. At that
time he was the only person doing kalamkari. The
only person."*

*Images: in conversation with Dr. Niranja (Oct 2025)
Dr. Niranja's father's works at V&A East Storehouse in London*

"Nobody is using natural dyes. The craft became commercial. Its very easy to use the chemicals. Faster. See, suppose you have to prepare the black colour. It will take you 10-13 days to prepare. If you go to the market, immediately within half an hour you can get the black colour."

"Suppose you have to treat the cloth in milk & myrobalan, you need the manpower. You need the sun also. How we can work without sun? Without manpower?"



Images: Dr Niranjan & Vibhuti with final textile piece
Bacterial pigment testing in Srikalahasti, India (Dec 2025)



Images: Visit to Archana Jaju's workshop, October 2025

Sathwika

Kalamkari artist at Archana Jaju's kalamkari workshop, Srikalahasti.



"Kalamkari works involves only natural dyes and the long drying process, heavy rain and high humidity slow downs the work and the fabric takes more time to dry.

The recent rains have affected our Kalamkari workshop in a few ways, because Kalamkari works involves only natural dyes and the long drying process.

And also, the artisans need proper sunlight in a different stages, like washing sun, drying and coloring. Due to the rains, the artisans who travels by nearby villages, they face challenges. They face difficulties to reaching the workshop, which slow downs the work."

Activity 02: Ecologise

Examining the Planetary Debt of a Textile

Objective: Having traced the historical roots of your chosen textile, you must now examine its present-day climate reality. This activity asks you to investigate its true ecological footprint, the climate risks faced by its makers, and the local knowledge lost to industrialization.

1

Locate the Extractive Zone

Bring your textile into the present day. Look at where the raw materials are currently harvested, synthesised, or manufactured.

- Where is the physical burden of producing this material located today?
- Is this region experiencing severe climate events (droughts, flooding, desertification)?
- Does the geography of production function as a "sacrifice zone"?

Name the geography sustaining this material today, and describe its current climate reality.

The More-Than-Human Toll

Investigate how the production of your textile treats the non-human world today

2

- The Material: How is the raw fibre grown or synthesised? Does it act as a monocrop that strips the soil, or a petroleum product that requires extraction?
- The Alchemy: What chemicals, heavy metals, or synthetic dyes are used to transform it?
- The Water: Does the production process treat local water systems as collaborators or drains?

Prompt: Draw or describe the local ecosystem attached to this textile. Is the more-than-human world treated as a co-creator, or as a commodity?

The Somatic Impact (The Toll on the Body)

We cannot separate the exploitation of the earth from the exploitation of frontline communities.

3

- What extreme weather conditions do the makers face on the factory floor or in the field? (e.g., heatwaves, lack of ventilation, exposure to toxic run-off).
- How does the changing climate directly threaten their physical health and their economic livelihood?

Prompt: Write down the human cost. How is the ecological crisis manifesting as a physical hazard for makers?

4

Recognising Epistemicide

Before this textile was industrialised or mass-produced, it likely held a deep relationship with a local ecosystem.

- What ancestral, ecological, or traditional knowledge was erased to make this material faster, cheaper, or more uniform?
- If your material is a modern synthetic (like recycled plastic or bio-leather), what local, nature-based material is it actively replacing?

Prompt: What specific material intelligence or ecological wisdom has been lost (or is currently endangered) in the production of this textile?

The Ecological Reckoning

Review your answers. If you were to continue designing with this material in the future, you can no longer plead ignorance.

5

- Can this material exist within planetary boundaries, or does it inherently require extraction?
- To achieve true interspecies justice, what must happen to the relationship between the human makers, the soil, and the water?

Prompt: Based on its ecological reality, does this material need to be abandoned, adapted, or repaired?



03

PLACE-BASED DESIGN INTERVENTIONS

35mm film image by Vibhuti Amin
Artisans at Kalamkari Research & Training Centre,
Srikalahasti, India.



Images by The Ruta Films
Vibhuti testing bacteria pigments, bacterial pigment used by artisans.

Design as a Practice of Repair

The first two parts of this workbook traced the colonial inheritance of design and its planetary consequences. This final section asks: What does it mean to design for repair?

For decades, the fashion industry's response to ecological collapse has been framed through the lens of "sustainability," an effort to minimise harm, optimise supply chains, and make a linear system incrementally less toxic. However, for the frontline communities embedded within these supply chains, climate change is not a future risk to be mitigated but a present-day reality. Furthermore, sustaining the current baseline is fundamentally inadequate when that baseline is built upon centuries of epistemicide and environmental degradation (Williams et al., 2020). We cannot simply sustain a broken system; we must regenerate it.

To reclaim design from its colonial ties, we must expand the traditional mitigation hierarchy (Avoid, Reduce, Restore, Transform) from a corporate metric into a framework for interspecies justice.

Expanding the Hierarchy: From Reduction to Transformation

The lower tiers of the mitigation hierarchy: Avoid (refusing toxic chemicals or production in vulnerable biomes) and Reduce (lowering water consumption and transitioning to rain-fed fibres), are critical, but they operate within the paradigm of harm reduction. They do not challenge the underlying systems of power (Williams et al., 2020).

True repair occurs in the upper tiers. Restore and Regenerate demands that design interventions actively replenish the soil, clean the water systems, and restore the biological intelligence of a place. The final stage, Transform, requires a complete shift. It challenges the dominant capitalist metrics of endless growth and standardisation, replacing them with bioregional resilience, cultural sovereignty, and more-than-human reciprocity.

Decolonising the Laboratory: The SLOC Framework

When the modern design industry speaks of "next-generation materials" or "bio-design," it typically envisions laboratories funded by venture capital and protected by corporate patents. This centralisation of biological innovation threatens to become a new frontier of climate colonialism, where the Global South is once again relegated to supplying raw biomass while Western corporations own the intellectual property (Gómez-Barris, 2017).

To transform the system, biological innovation must be democratised and place based. Design theorist Ezio Manzini argues that resilient futures depend on systems that are SLOC: Small, Local, Open, and Connected (Manzini, 2015). Building on this, Francesco Mazzarella posits that craft communities do not need to "scale up" to meet the demands of global mass production, which inherently leads to extraction, but rather should "scale out," creating distributed, bioregional networks of hyper-local innovation (F. Mazzarella, personal interview, Feb, 2026).

It is within this framework of distributed, grassroots transformation that Nafaskāri is situated.



Images by Vibhuti & The Ruta Films
Final piece on 35mm film in Srialahasti
& Vibhuti in IISER laboratory



Evidence of Swarnamukhi soil containing
pigment producing bacteria

Nafaskāri: Biology as a Reparative Medium

Nafaskāri (meaning "breath work") is an intervention designed to restore the material sovereignty of the Kalamkāri craft in Srialahasti. If 45° C heatwaves, flooding, and the chemical suffocation of the Swarnamukhi River have severed the artisan's reliance on traditional botanical dyes, the solution is not to shift to toxic synthetics. The solution is to adapt the craft's ecology for future generations.

Nafaskāri reimagines Kalamkāri's future through living colour: microbial pigments cultivated from local soil and river bacteria. By harnessing harmless, pigment-producing microorganisms native to the Srialahasti ecosystem, artisans can cultivate deep reds and rich blues that directly mirror the hues of madder and indigo. Scientifically, microbial dyeing drastically reduces craft's liquid footprint, eliminates heavy metal mordants, and bypasses the agricultural strain of cultivating dye crops in a rapidly desertifying climate (Venil et al., 2013).

Crucially, this is not a departure from tradition; it is an evolution of it. Kalamkāri has always been a practice of interspecies collaboration. Working with bacteria merely shifts that collaboration from the botanical scale to the microscopic scale. By introducing low-tech, bioregional fermentation into artisan workshops, the laboratory is returned to the maker.

The Microbial Sampada

In Srikalahasti, master artisans have long maintained sampadas (material wealth), archives of painted textiles and motifs, ensuring that the craft's intellectual history survives for future generations (Sengupta, 2019). This practice is not merely theoretical; it is a tangible, living lineage. During a research visit to the V&A East Storehouse in London, I encountered one such archive firsthand: the Book of Textile Samples, Kalahasti, 1982, created by master artisan Jonnalagadda Gurappa Chetty. To hold this book, crafted by the grandfather of my collaborator, Dr. Niranjana, was a profound reminder that Kalamkari is fundamentally an intergenerational dialogue. It is an act of preserving knowledge against the erosions of time and industrialisation.

Nafaskari builds directly upon this familial and cultural tradition by proposing a new kind of sampada: a microbial dye booklet. If Gurappa Chetty's 1982 archive preserved the botanical intelligence of his era, this new living archive documents the step-by-step material interaction between ancestral substrates and cultivated microbial life. It is a continuation of the lineage, adapting the ancestral archive to the realities of a climate-stressed world.

The following pages serve as the physical sampada of Nafaskari: an intervention in which the polluted Swarnamukhi River is no longer treated as an extractive resource, but as a living co-creator in the ongoing evolution of Kalamkari.

Dear Maker,

05/26

Srikalahasti kalamkari is ancient material intelligence. Today, its survival depends on handwork and living biology.

Here are 3 sample pieces of Nafaskari dyes. This sample set will help to know how to adapt dyeing to climate changes.

I hope this serves as a tool for grassroots learning, ensuring laboratory and craft remain in the hands of the maker.

In solidarity and preservation,

Vibhuti Amin

Researcher

LONDON / SRIKALAHASTI

2026

The Microbial Sampada

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Swarnamukhi Isolates:



The Microbial Sampada

In Srikalahasti, master artisans have long maintained sampadas (material wealth), archives of painted textiles and motifs, ensuring that the craft's intellectual history survives for future generations (Sengupta, 2019). This practice is not merely theoretical; it is a tangible, living lineage. During a research visit to the V&A East Storehouse in London, I encountered one such archive firsthand: the Book of Textile Samples, Kalamkari, 1982, created by master artisan Jonnalagadda Gurappa Chetty. To hold this book, crafted by the grandfather of my collaborator, Dr. Niranjan, was a profound reminder that Kalamkari is fundamentally an intergenerational dialogue. It is an act of preserving knowledge against the erosions of time and industrialisation.

Nafaskari builds directly upon this familial and cultural tradition by proposing a new kind of sampada: a microbial dye booklet. If Gurappa Chetty's 1982 archive preserved the botanical intelligence of his era, this new living archive documents the step-by-step material interaction between ancestral substrates and cultivated microbial life. It is a continuation of the lineage, adapting the ancestral archive to the realities of a climate-stressed world.

The following pages serve as the physical sampada of Nafaskari: an intervention in which the polluted Swarnamukhi River is no longer treated as an extractive resource, but as a living co-creator in the ongoing evolution of Kalamkari.

Living indigo
BLUE ANALOGS



A



B

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BOTANICAL MIMICRY (RED ANALOGGS - Madder)



A



B

Activity 03: Regenerate

Designing for Structural Repair

Objective: You have traced the colonial inheritance of your chosen textile and mapped its current planetary debt. Now, we transition from critique to creation. This activity asks you to imagine a design intervention that responds to the ecological and social realities you identified in Part 2, moving your material from extraction toward active regeneration.

1

Step 1: Return to Your Ecosystem (The Baseline)

Before we can regenerate, we must locate the specific harm. Revisit the ecosystem and the local communities you analysed in Activity 02. Identify the key challenges within this system. Try to be specific and grounded in place.

Socio-Cultural Challenges	Climate Challenges	Biodiversity Challenges
(loss of livelihoods, displacement, knowledge erosion)	(flooding, drought, extreme heat)	(soil degradation, species loss, water pollution)

Ideating the Intervention (The Pivot)

Design your solution. Look at the raw materials, dyes, and production methods currently used in your textile. How can you redesign this process so it no longer extracts from the baseline you just described?

- **Material:** Can you replace mechanical, chemical, or deep-earth extracted elements with biological, living, or recycled alternatives?
- **Process:** How can you change the way it is made? (e.g., shifting from water-heavy vats to dry-dyeing, or moving from synthetic binders to natural mordants).

Prompt: Describe your design intervention. What is the new material, method, or system you are proposing?

2

The Regenerative Design Map (Evaluation)

3

Design must actively heal. To ensure your intervention addresses the entire ecosystem, cross-check your idea against the three pillars of regenerative practice. Use the table below to map how your redesign functions in reality.

	Design for Communities & Cultures to Flourish	Design to Draw Down GHG Emissions	Design to Replenish Biodiversity
	(restore livelihoods, support knowledge systems, enable autonomy)	(low-carbon processes, local production, material shifts)	(restore soil, reintroduce species, regenerate ecosystems)
Nafaskāri	• Creates a place-based tool for future generations. • Fosters a bioregional economy. • Repositions pigment-making as grassroots learning.	• Reduces water consumption. • Eliminates the use of toxic synthetics. • Bypasses agricultural strain of cultivating crops in a drought.	• Replaces synthetics with biological substrates. • Ensures runoff does not poison the Swarnamukhi River. • Cultivates harmless soil microbes.
Your Design			

4

Scaling Out, Not Up (The SLOC Framework)

Corporate sustainability tries to "scale up" green innovation to feed global mass markets: a process that inevitably leads back to extraction. True repair requires "scaling out."

- Apply the SLOC framework to your textile: How can you make its production Small, Local, Open, and Connected?
- Instead of centralising production in a massive factory, how could this material be produced through a distributed, bioregional network of local makers?

Prompt: Redraw the map from Activity 01. Replace the long, global trade routes of extraction with a localized, circular, community-owned system.

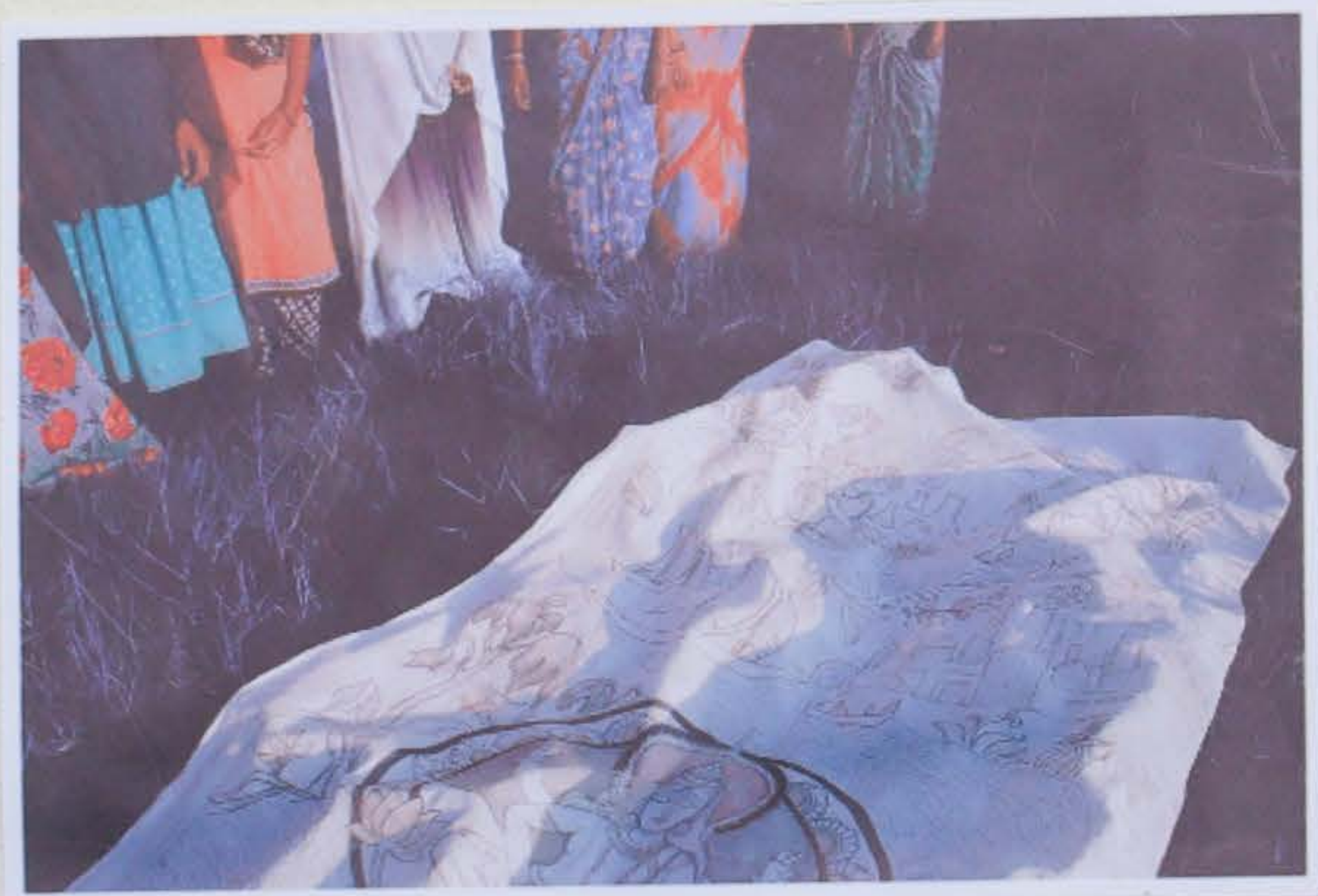
The New Sampada (Grassroots Ownership)

5

The tools of creation, whether they are biological, mechanical, or social, must belong to the maker.

- How will the knowledge of your new regenerative process be shared, adapted, and preserved locally?
- How does your design ensure that the artisans, farmers, or weavers involved are empowered not just as labourers, but as the active authors and guardians of this new system?

Prompt: How will you ensure this new knowledge remains in the hands of the community for future generations?



Credits

Thank you to the people who made this work possible.

Final Textile Piece: Cultivated bacterial dye and myrobalan on cotton.
Painted by artisans at the Kalamkari Research & Training Centre, Srikalahasti, India:

- Dr. Jonnalagadda Niranjana
- Tejasvini
- Sameera
- S. Sunita
- T. Subhashini

Stitched by tailors at House of Rare Corporate Office, Bengaluru, India:

- Prathibha.EM
- Srinivas.C
- Muniyappa.V

Scientific Mentorship & Laboratory Support:

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- Dr. Raju Mukherjee (IISER Tirupati)
- Barbara Paes and Paula Corsini (Grow Lab, Central Saint Martins)

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- Rosemary Crill
- Mayank Mansingh Kaul
- Dr. Francesco Mazzarella
- Around the World in 80 Fabrics

Film & Videography:

- The Ruta Films

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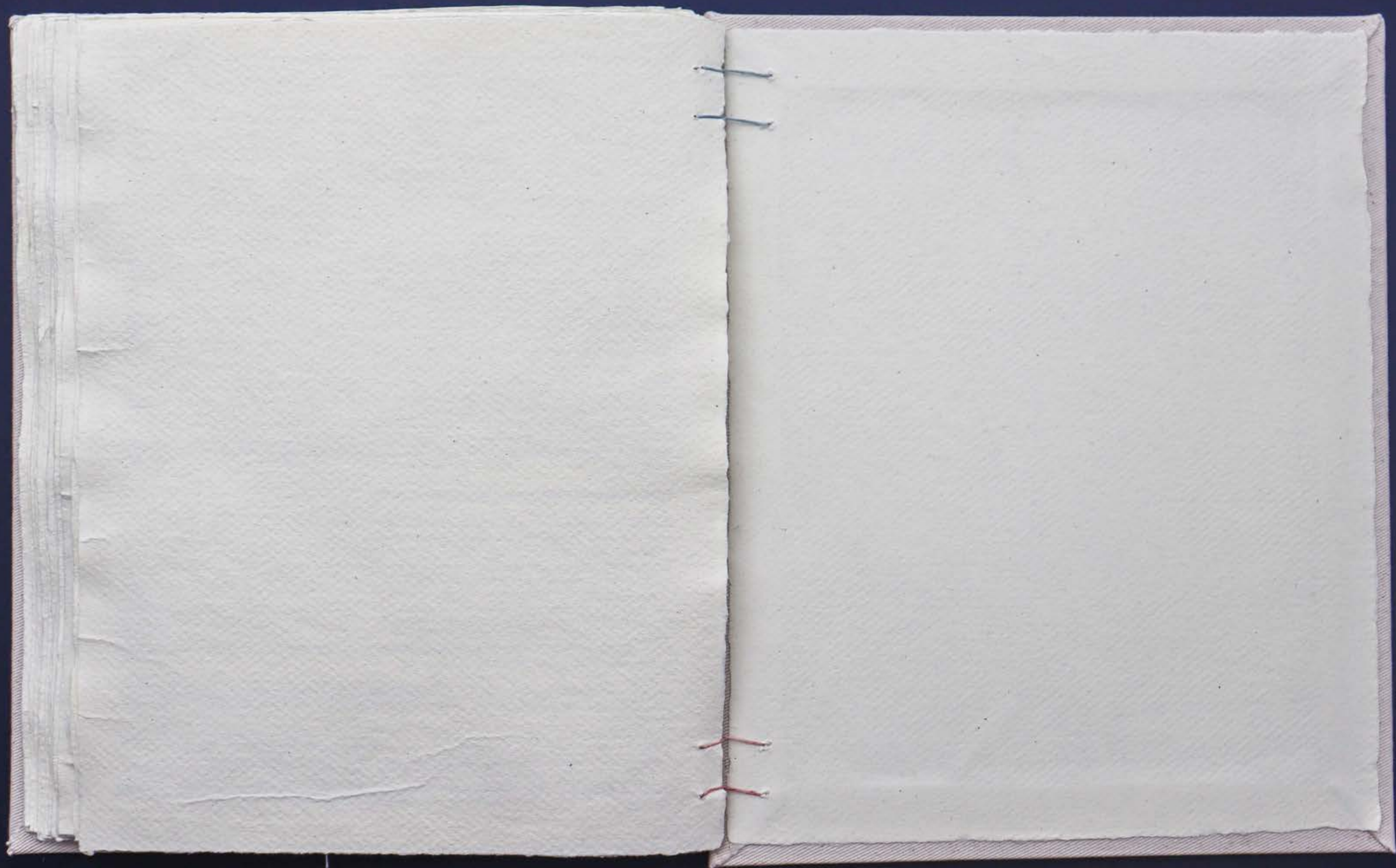
And finally, my parents for the endless love and support (logistical and emotional!)

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*"Innovation without context risks
repeating the very extractions that
built this industry"*

నఫస్ కారి
naḥaskāri

This workbook is a physical manifestation of its thesis. It is bound in organic recycled cotton from Central Saint Martins. The interior archive is printed on 100% long-fibered handmade Khadi cotton rag from South India. The physical textile inserts feature unbleached Coromandel cotton hand-treated with milk and myrobalan in Srikalahasti, and naturally treated cotton from Bangalore. No toxic mordants were used in the making of this archive.