High-performance regenerative textiles for the 21st century.
PROBLEM
Common threads across the fashion, healthcare and construction industries

Consumer demands
Industries using textiles face a confluence of consumer demands: high-performance products that are produced sustainably.

Sustainability needs
Incumbent fibers like Cotton are resource hungry or cause harm to living organisms.

Unequal value chain
Raw material farmers only receive a fraction of the profits from the sale of finished products.
**Novel composition**
A high-performing banana-graphene textile.

**Better materials**
- Utilises waste stems from the banana harvest
- Avoids growing virgin materials on additional land
- Harnesses non-toxic processing methods

**Inclusive value chain**
An out-of-the-box, socially responsible production system that affords farming communities the opportunity to take part in value-adding processes.

**SOLUTION**
With applications for the fashion, healthcare and construction industries.
WHEN POWERS COMBINE

**Banana Fiber**
- Higher tensile strength than cotton
- Good absorbency
- Highly breathable
- Quick drying
- Greaseproof
- Fire resistant
- Tear resistant
- Lightweight

**Graphene**
- Stronger than steel
- Flexible, yet stiff
- Impermeable
- Thermally conductive
- Thin
- Light
- Transparent
CUSTOMERS

Fashion
A multi-sided market made of:
1. Fashion houses
2. Raw material farmers and producers

Healthcare
1. Hospital and clinics
2. Rural health centers in developing communities

Building
1. Residential and commercial construction companies
2. DIY retailers
**Novel composition**
A durable, antimicrobial, insulating textile.

**Better materials**
Utilising green chemistry to process banana fibers and produce graphene.

**Inclusive value chain**
Our production system helps fashion houses demonstrate investment in farmer wellbeing:
- Turning a disposal cost into revenue
- Building capacity for local graphene production
Better materials
A broad range of applications, including biotextiles, biophysical sensors, wound healing, and water purification.

Inclusive value chain
Our production system is designed to be simple and streamlined, allowing it to be implemented in multiple geographies.

Novel composition
An antimicrobial, impermeable, ductile textile.
Better materials
We see application in areas of construction where currently used materials:
- Cause OH&S risks for workers
- Are bulky, heavy or subject to degradation

Novel composition
A strong yet lightweight, durable and ductile, thermally-conducting, and water-resistant textile.

Inclusive value chain
Providing the opportunity for localised production.
## Global Market Sizes

<table>
<thead>
<tr>
<th>Total Addressable Market</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6.35 billion</td>
<td>9.1%</td>
</tr>
<tr>
<td>Global Ethical Fashion</td>
<td>2020-2030</td>
</tr>
<tr>
<td>$192.3 billion</td>
<td>4.9%</td>
</tr>
<tr>
<td>Global Medical Textiles</td>
<td>2020-2025</td>
</tr>
<tr>
<td>$192.3 billion</td>
<td>11.2%</td>
</tr>
<tr>
<td>Global Green Building Materials</td>
<td>2012-2022</td>
</tr>
</tbody>
</table>

**Sources**
- **Healthcare**:
Our goal is to develop textiles that have strong functional properties and are built from circular design principles.

This has emerged from our team's initial concept - a swaddling device for newborns - which drew inspiration from the Kangaroo's antimicrobial, thermoregulating pouch.

As we move towards high-performance composites incorporating graphene, we are taking inspiration from nature's strongest structure: the hexagon.

Step 1: Address neonatal health challenges from infection and thermodynamics.

Step 2: Identify textiles with antimicrobial, thermal, and sustainable properties.

Step 3: Develop textiles, merging high performance with sustainable materials.
Direct Competitors

Indirect Competitors

Greener Incumbents
Examples: Organic Cotton, Bamboo, Rayon
Advantages: Already understood by industry; organic/natural statuses obfuscate embodied energy in growing & processing

Plastics
Examples: Scrubs, Packaging, Curtains, Containers, Bags
Advantages: Already understood by industry; durability and sterility

Alternative Building Methods
Examples: Rammed earth, Earthbag, Strawbale
Advantages: Inherently insulating, using locally available materials, minimally processed
Competitive Advantages

Addressing sustainability and function
Combining low-impact banana fiber with high-tech graphene meets two increasing demands of clothing consumers.

Harnessing banana fiber performance
With properties that outperform traditional textiles, medical applications for banana fibers have not yet been explored.

Utilising an abundant material
Each hectare of banana production produces 220 tonnes of by-products annually, costing farmers ~$125 to dispose of.

Breadth of knowledge
Our team has a diversity of experience across the value chain: from banana cultivation and working with graphene, to using medical devices and handling construction materials.
Future Roadmap

1. Prototype compositions and produce application POC's
   Q1 2021

2. Validate market demand for promising applications
   Q2 2021

3. Market derisking: LOI signed
   Q4 2021

4. Technical derisking: produce MVP
   Q2 2022
The Team

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