



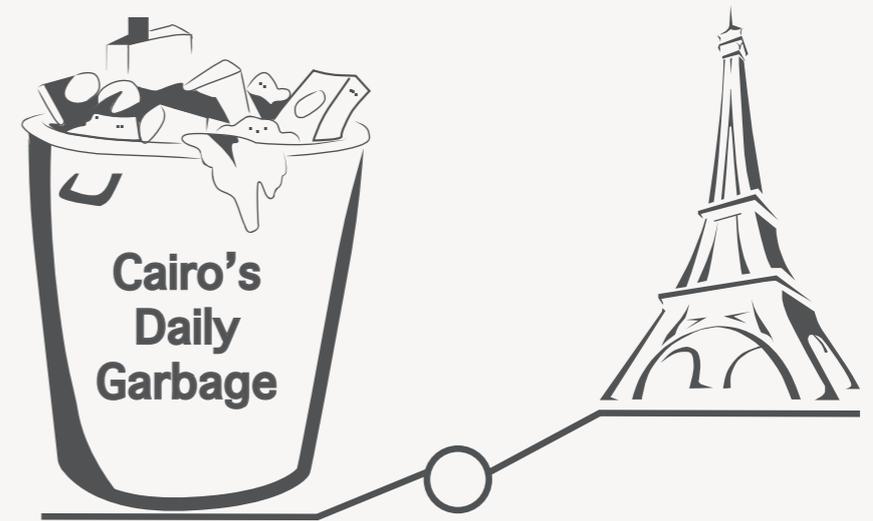
# **Reusability and Sustainable Fabrication**

**by Hadwa Omran**

# Introduction

- **Waste Management in Cairo**
- **Research**
- **Material Selection**
- **Processing**
- **Concept**
- **Future Development**

# Waste Management



# Waste Management

Zabbaleen community handles 50% of the city's waste



# In-depth

Zabbaleen collect items for recycling or reselling.



We collect from anywhere and we sell our collectables in Port Said street, Kilo ٤,٥ & El-Waili street. We sell recyclables → small traders → larger traders → manufacturers

**Ahmed**

We collect anything we can find of value & weight. We do not collect paper & plastic, they take too much space & are cheap material. However, we might take newspapers ١ kg = ٠,٨٠ EGP

**Mustafa**



# Material

## Plastic Recycling Sector (2009)

65%

**wasted**

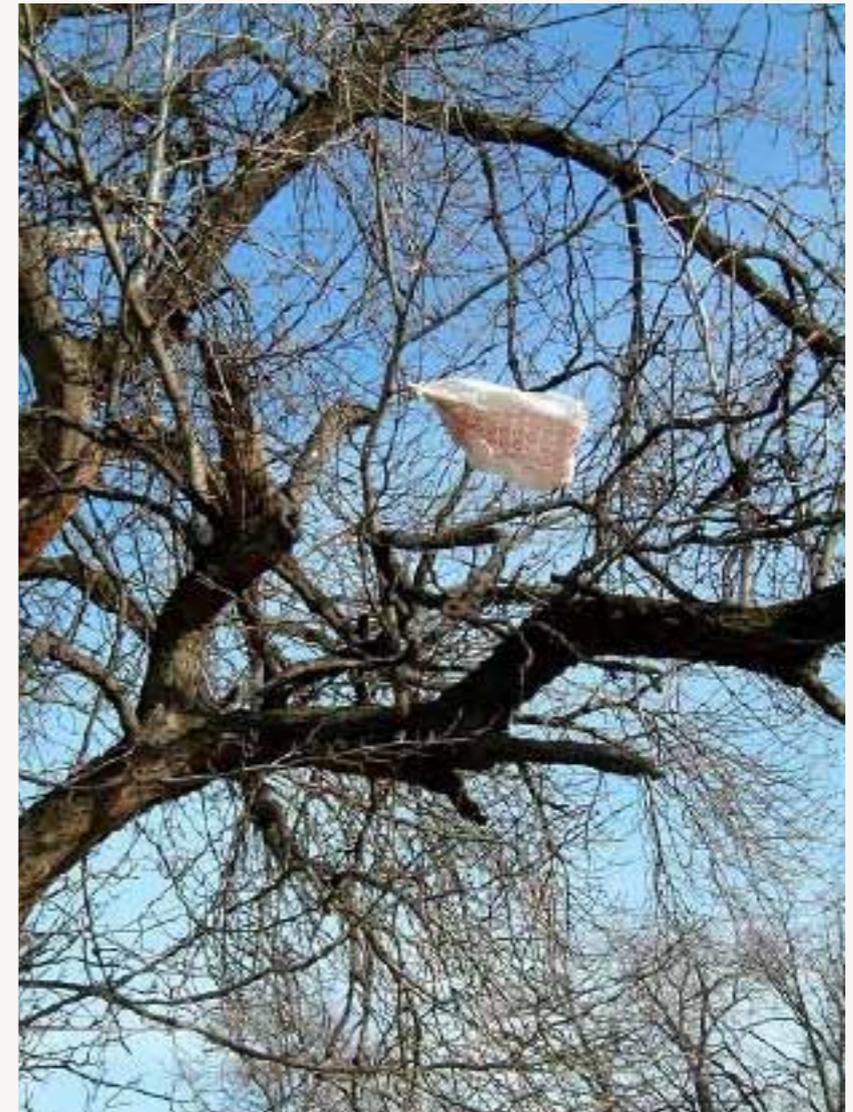
30%

**reused**

5%

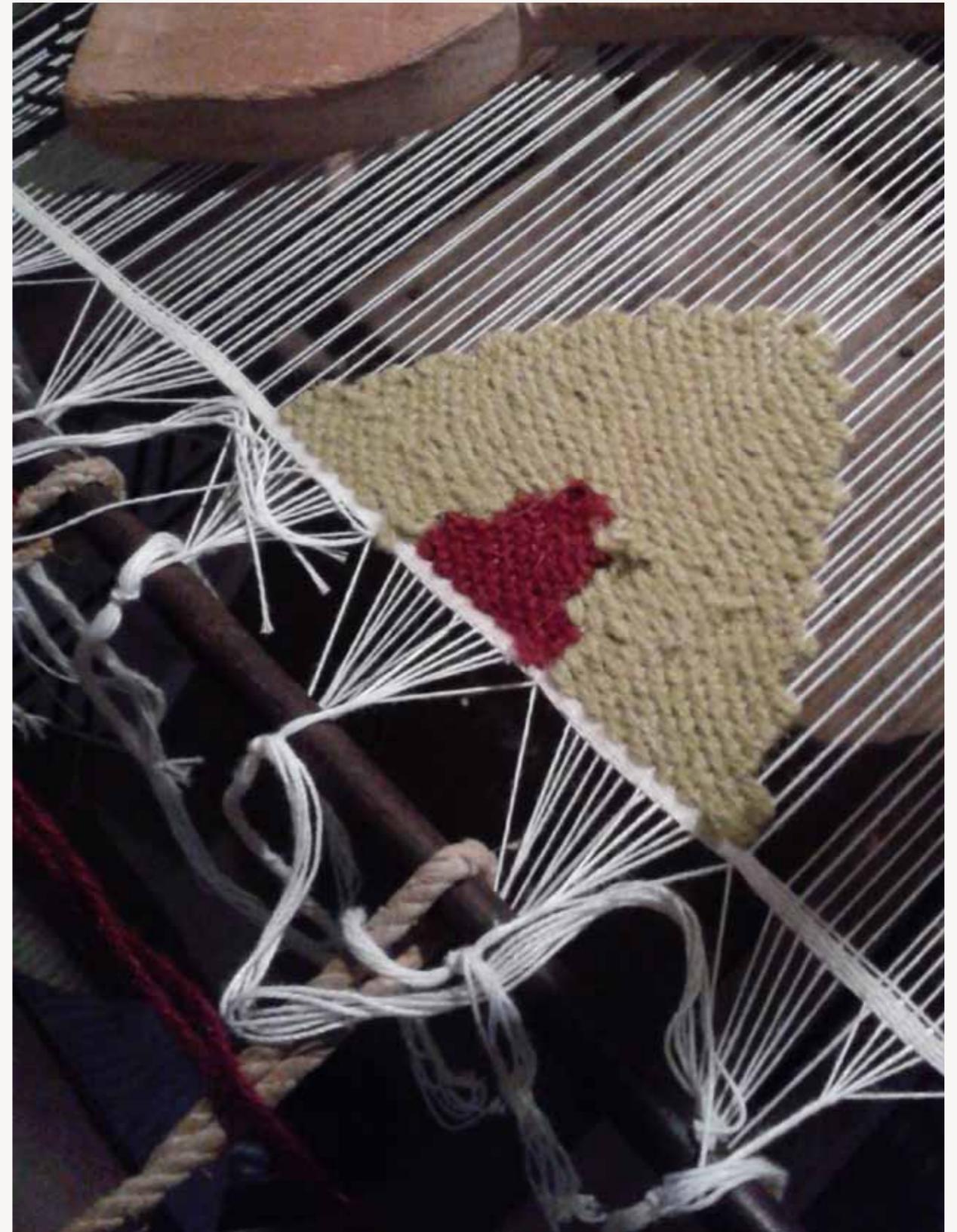
**recycled**

Plastic Bags effects on the environment



# Handloom

Craft of weaving on handloom has been popular since the ancient times



# Handloom

## Limitations of craft

- **Raw materials**
- **Market Demand**

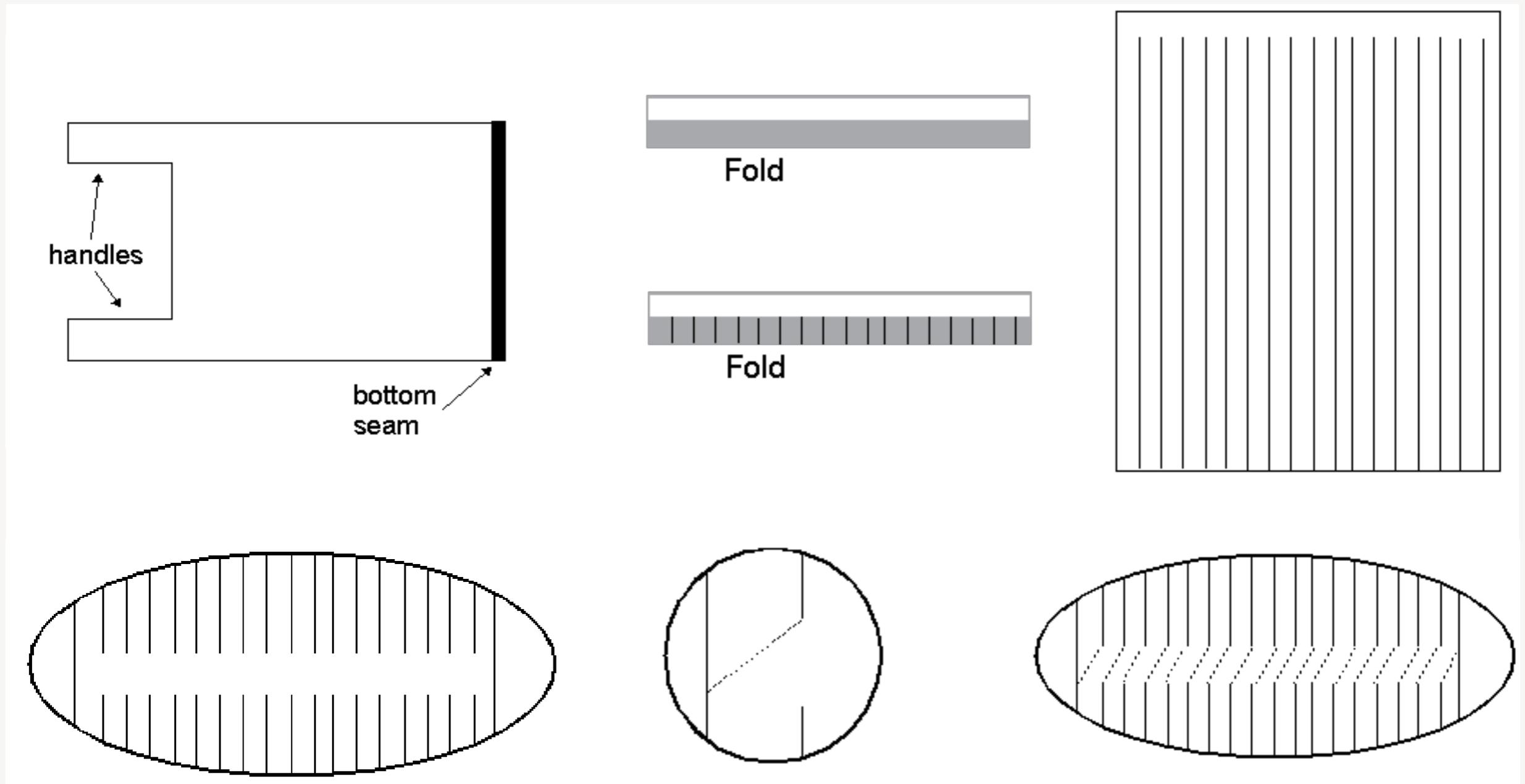


# Concept

Combining the authenticity of craft with the reusability of discarded material to elevate production through a sustainable approach.

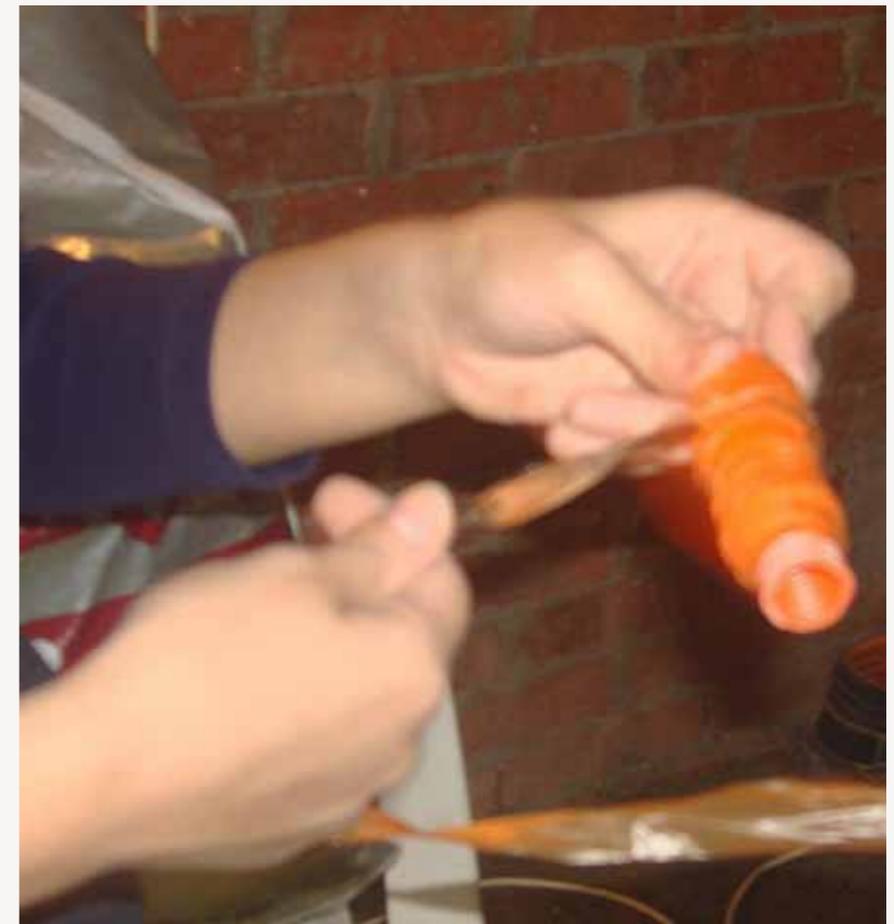
# Process

## Preprocessing Stage: Technique of cutting a plastic bag by scissors



# Process

Preprocessing Stage: Spinning plastic threads around bamboo tubes



# Process

## Initial experimentation with small handloom model



# Process



Product Design

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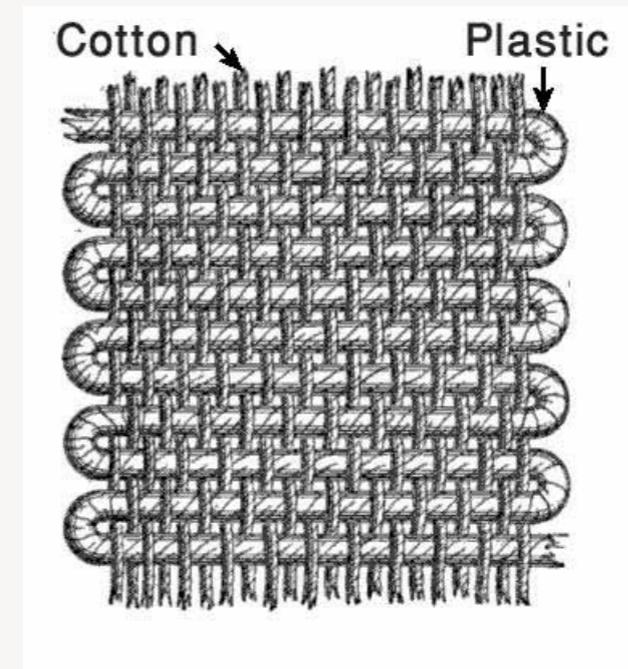
Reusability and Sustainable Fabrication "Plastex"

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Hadwa Omran

# Plastex

Sustainable fabric developed



## Laboratory test results

Test	Result
Average Tensile Strength/Kg	58
Average Elongation %	200<
Water Absorption Rate %	12
Shrinkage Rate	0
Average Tensile Strength Knitting/Kg	42 (Cutting the Fabric)
Average Power Hack/Kg	25
Effect of Heat on the Sample (at 50 °C)	Not Affected

## Development of design prototypes



# Conclusion

- **Sustainable Fabrication**
- **Contribution to society & environment**
- **Future Development**



**Thank you**

**Any questions?**