

System Breakdown

BY ELLA DAVIS



System Breakdown (and Reconstruction)

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Prompt

Studio - Human / Non Human

“ This semester we will be focusing our work on our individual interpretation of the relation between human and non-human and the dualisms that uphold cultural constructs of “nature” and “wilderness”. “

Brief

Definitions

Decomposer

An organism, especially a soil bacterium, fungus, or invertebrate, that decomposes organic material that is used to break down a substance

Recycle

To deconstruct a product to its simplest form without any waste in order to give its components a new purpose

Opportunity

Current State

Humans create waste on a daily basis that is put into landfills, therefore ending the life-cycle of the item

Impact

As a result, there is a linear life-cycle which creates waste and necessitates the production of new products

Desired Outcome

Create a circular product cycle within the fast fashion industry that is produced by manufacturing clothing that does not necessitate a third party recycling system in order to break down the components of the object into their simplest physical form

Values and Ethics

The product should be accessible to all people, low in cost, and allow space for the knowledge of recycling practices to grow.

Throughout an iterative process, there should be a constant review of how the product will impact the environment, with the end goal of the product reducing the amount of waste created by the fast fashion industry.

Human

The Culture that has formed from interference, in-organic systems, and the cultivation & development of natural resources

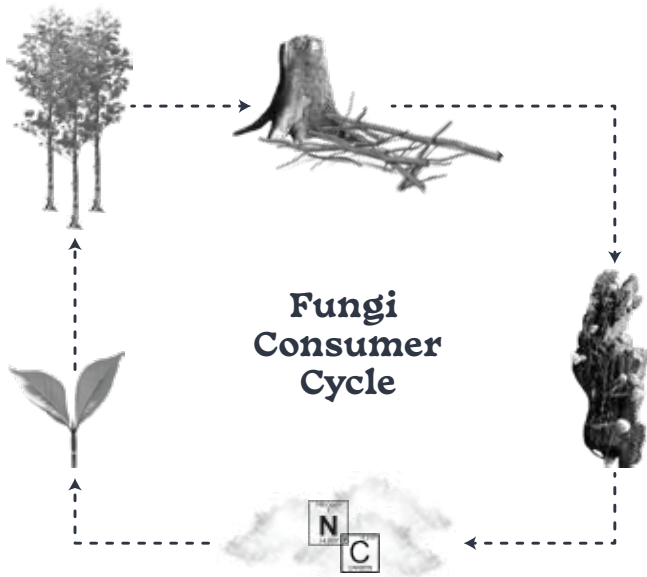
Linear Systems

The intersection of nature, natural systems, interconnection, and restorative cycles outside of the built environment.

Circular Systems

Non-Human

Consumption



Consumption vs. Consumerism

Consumption (n.)

the use of something

Consumerism (n.)

the promotion of the consumer's interests
(especially for economic value)

As humans, we have the inherent need to use objects, resources, and energy. However, with the introduction of market, there is the birth of consumerism. This begins when the inherent needs of a person are monetized to create profit.

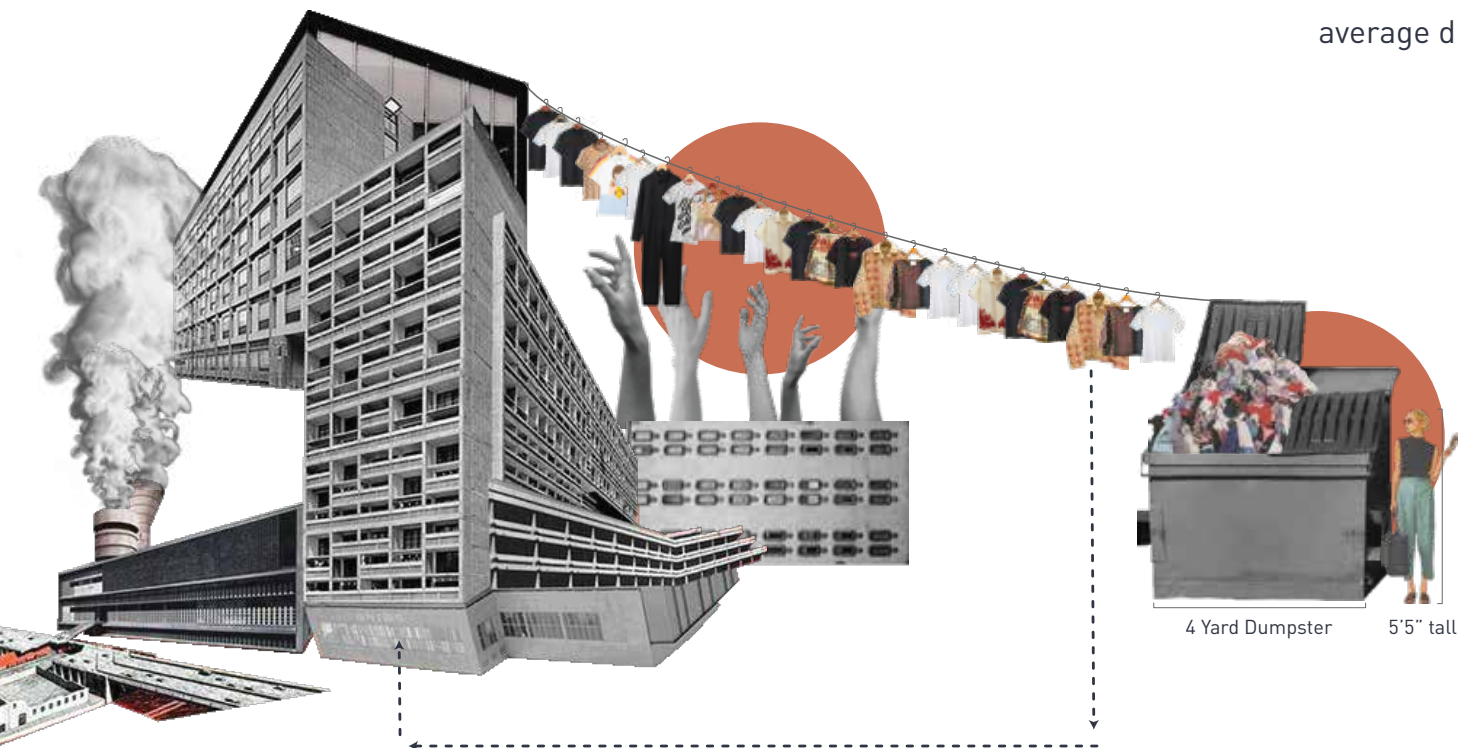
"Consumerism Definition & Meaning." Merriam-Webster, Merriam-Webster, <https://www.merriam-webster.com/dictionary/consumerism>.

The Human

Fast Fashion is a human cycle, and extremely linear. Clothing goes from being manufactured, to stores, and eventually the dumpster, where it will then spend the remainder of its days in a second hand store or a landfill.

The Average American throws away 82 pounds of textile waste each year. This ultimately adds up to more than 11 million tons of textile waste from the United States alone.

To give a visual, this is the same as filling up an average dumpster **5,500 times**



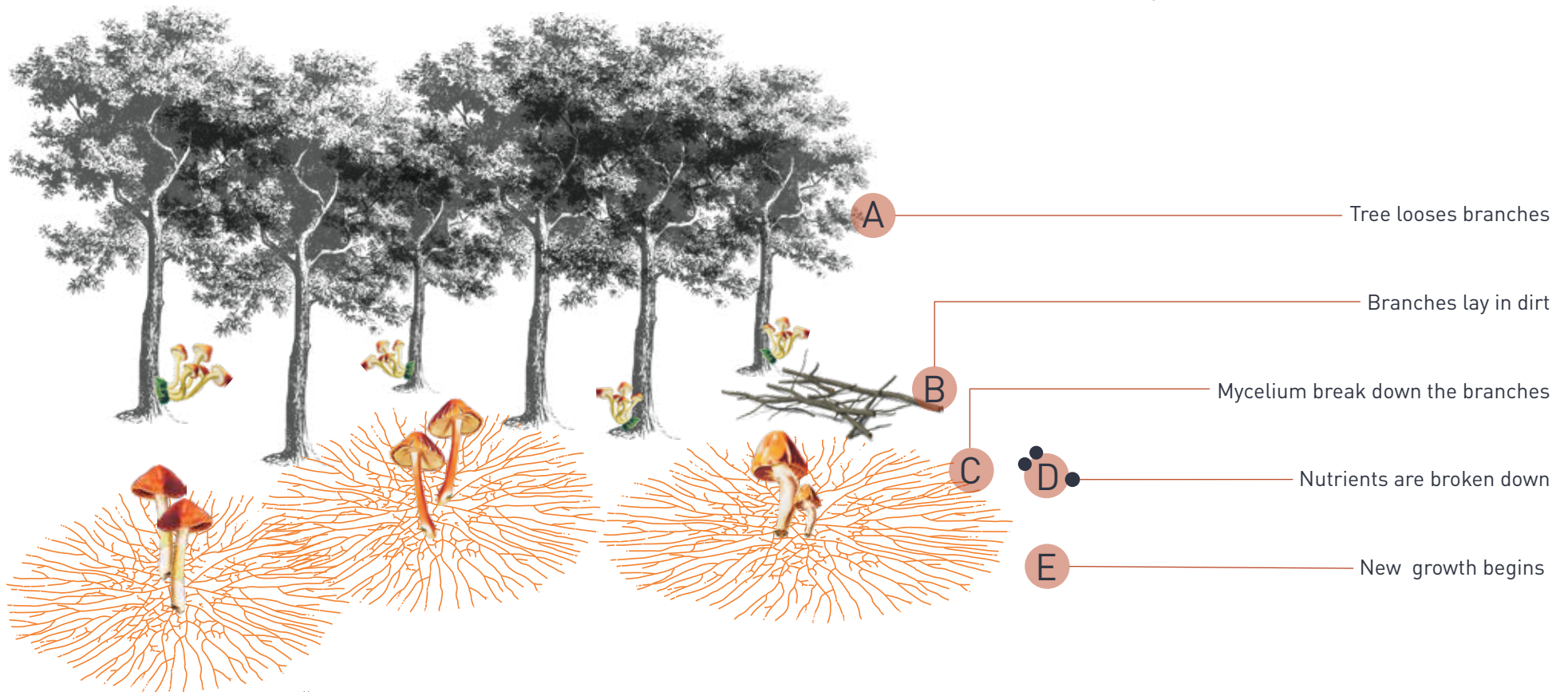
Only 14.7% of textiles were recycled in 2018, adding up to 2.5 million tons

GroCycle, director. Mushrooms in Permaculture & Regenerative Agriculture | GroCycle. YouTube, YouTube, 8 June 2020, <https://www.youtube.com/watch?v=a9W4KFK5KeY>. Accessed 25 Jan. 2022.

The Non-Human

Mushrooms and Mycelium are non-human cycles, and are closed circular systems. Using only what they need, and recycling the rest, the system creates a symbiotic relationship with the plants which surround it.

Providing nutrients and breaking down waste into its simplest form, so that it can be transformed into something useful.

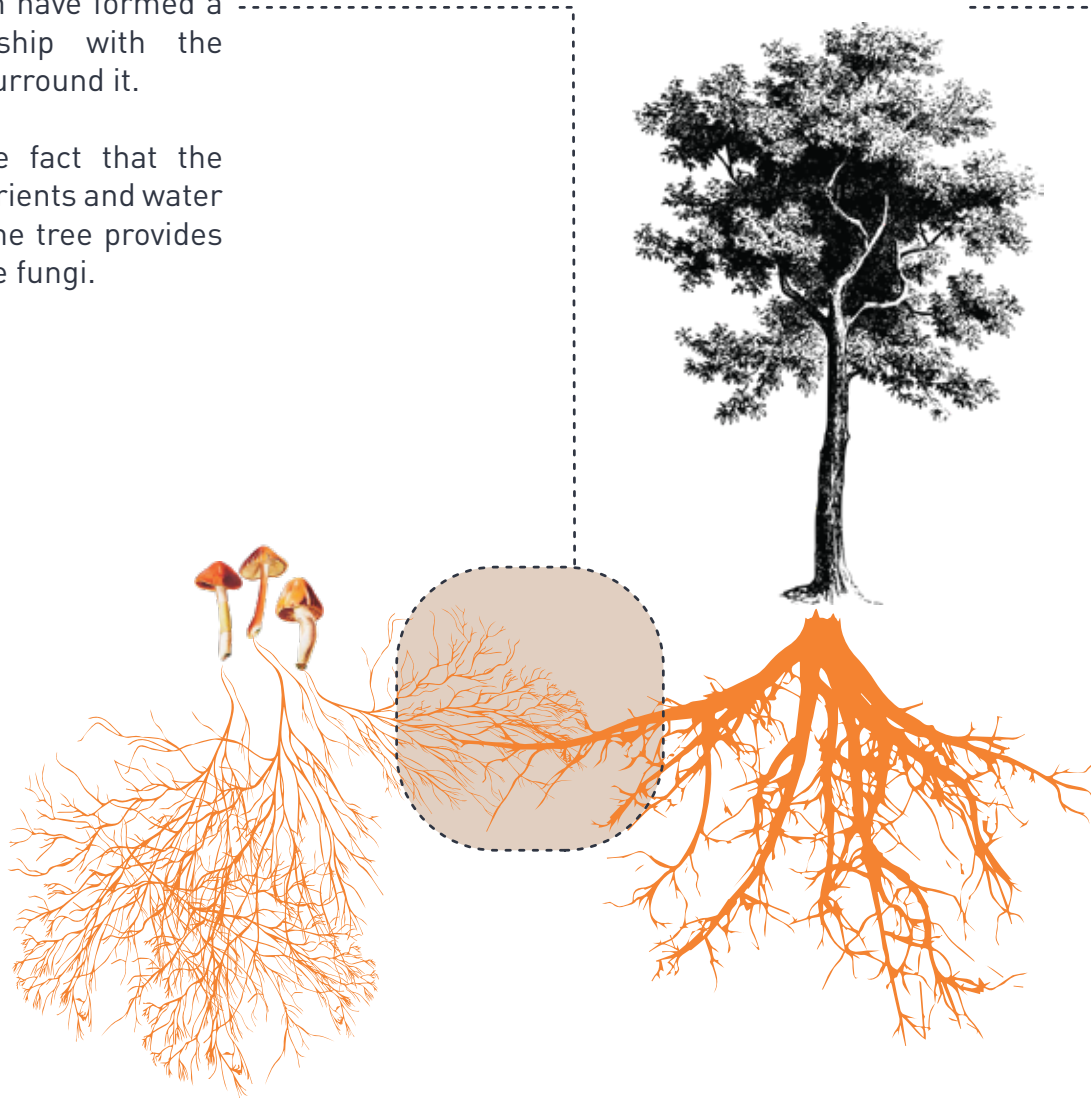


“Fungi are important in systems because of their innate ability to recycle nutrients to become available to other organisms in the environment”

System Symbiosis

The fungi mycelium have formed a symbiotic partnership with the other plants that surround it.

This is due to the fact that the mycelium bring nutrients and water to the tree, while the tree provides vital nutrients to the fungi.



Creating symbiosis acknowledges that both parties in the system have needs that have to be addressed in order to develop a sustainable and positive relationship. Without this, neither aspect of the system would be able to thrive, and therefore be susceptible to a complete breakdown.

Opportunity

Create a system which studies the Fungi's ability to break down and distribute products in order to assist other members of the system. Along with creating a circular system which creates a symbiotic relationship between company, consumer, and environment

Flax



Flax (*Linum usitatissimum*)

Characteristics

- Slightly silky and lustrous
- Durable, stiff, and crisp
- Withstands high temperatures
- Breathable and cool to wear
- Low elasticity
- Pill and insect resistant
- Absorbs and release moisture quickly
- Fades under continuous sunlight
- Softens after wash and wear
- Biodegradable

Description

Flax is one of the oldest and strongest natural bast fibers and is extracted from flax or linseed plants. It is a stiff, crispy fiber with a natural luster. Its color usually ranges from ivory to light tan to gray.

Sustainable Benefit

Flax is grown quickly and easily, requires few chemicals, and does not require irrigation during its cultivation.

Linen: A History

36000 BC

The "first" linen textile is produced by humans

5000 BC

Flax farming and weaving becomes prominent in culture (especially in Egypt)

3000 BC

Flax begins to be exported throughout various countries

789

Charlemagne (ruler of Western Europe) gives directive that everyone must grow and weave flax in order to produce more linen.

Early Flax Cultivation and Linen Development

1300's

"Baptistle" a delicate linen, is developed and desired by many compared to the coarser garments that were previously produced.

1730

Cotton is first spun by machinery in England in 1730

1810

Philippe De Girard creates the flax spinning machine, allowing production to increase.

1850

Flax declines and Cotton production increases.

Popularity and Linen "Revolution"

Fall of Linen

Flax / Linen

Cotton

2010

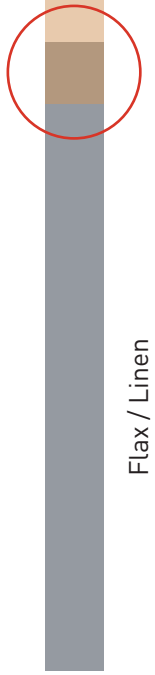
Knitted and washed linen comes to market, allowing clothing to wrinkle less and be more versatile in its use.

Today

Uprise of linen for better environmental footprint.

Due to the rise of global climate change concerns, many companies are making a conscious effort to move towards materials that are more sustainable and require less resources to process and manufacture

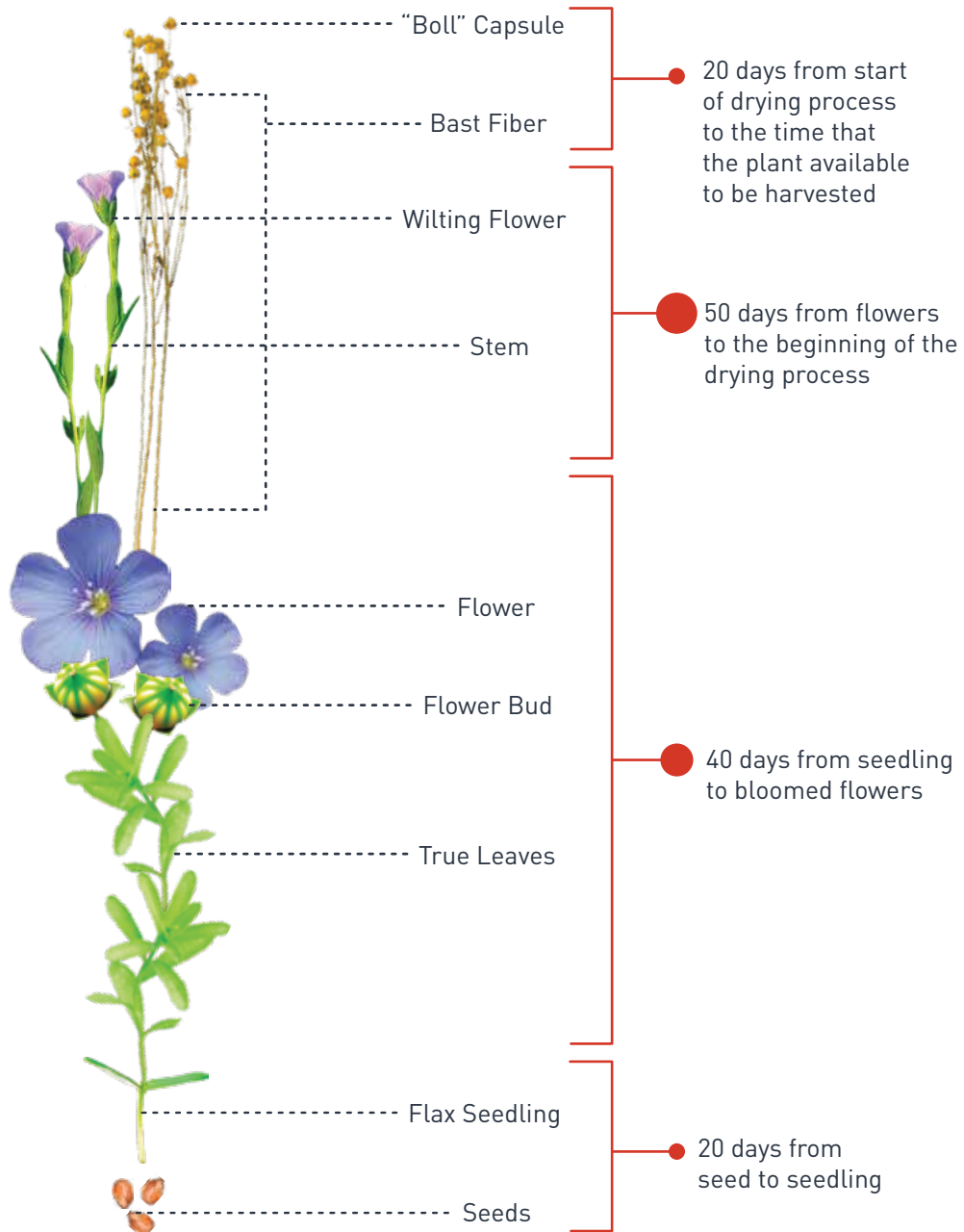
Second Rise of Linen



Lineh:

a Circular Company Model

The Flax Plant



The Flax plant is a hearty plant that is able to grow in various conditions throughout the United States.

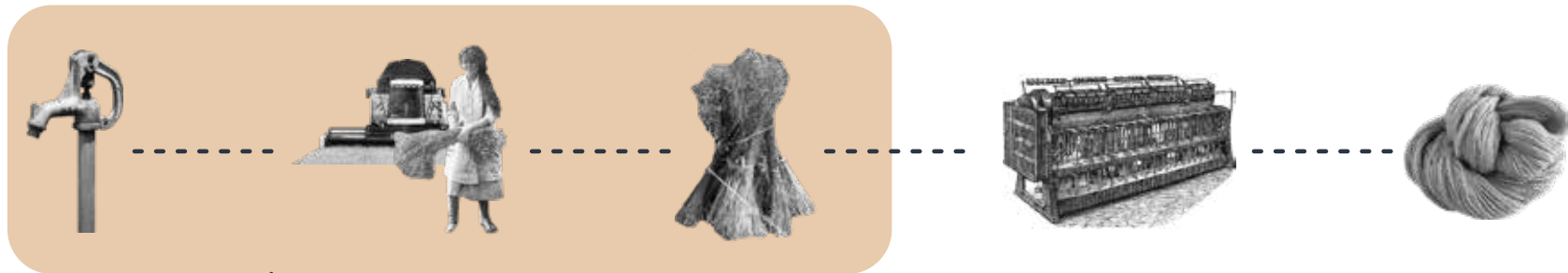
From start to finish, this plant only takes four and a half months to be ready for harvest from the time that it is planted.

Flax Grow Zones



The Company System

Material Cultivation and Processing



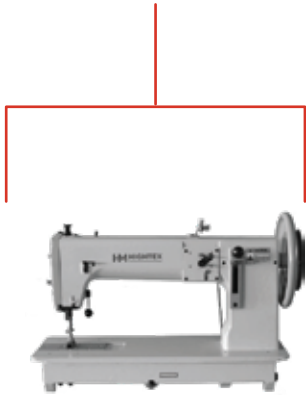
Natural Space - Dirt

➔ At the forefront of this system, there is the growing space. This is where life starts, and the material cultivation begins. Flax is harvested and processed in order to create Linen.

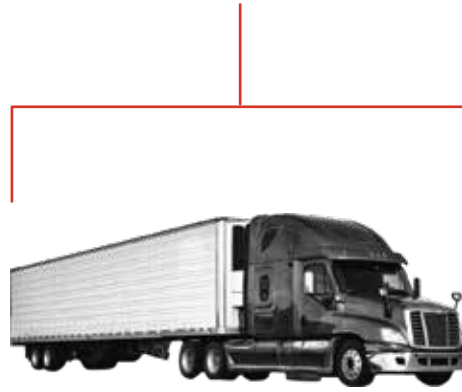
However, many products never make it full circle after they leave the growing space. This is because products will generally end up in a landfill or getting exported to other countries once their product-life has expired.

The Company System cont.

Product Creation



Shipping and Storage



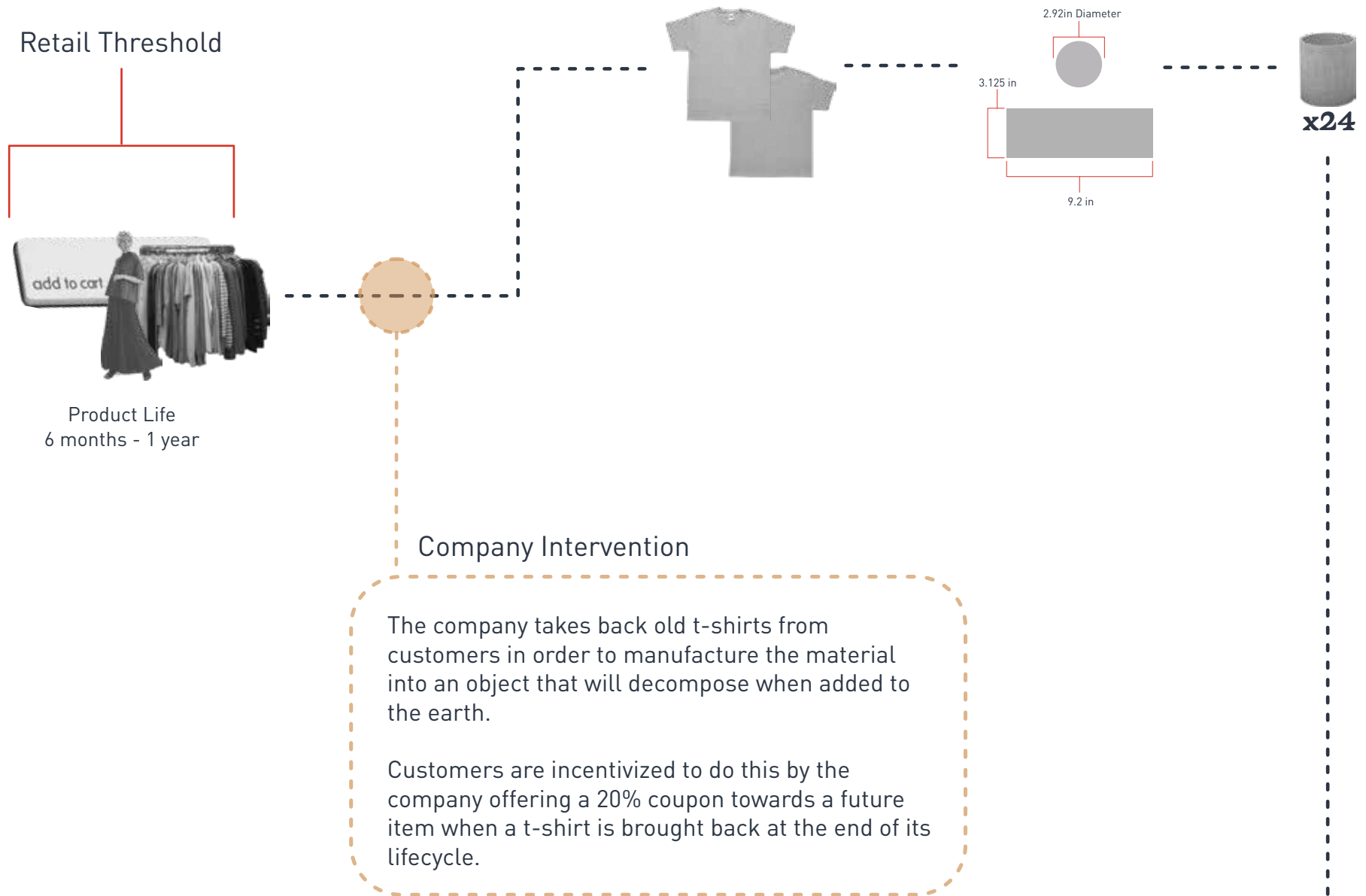
Retail Mark-Up

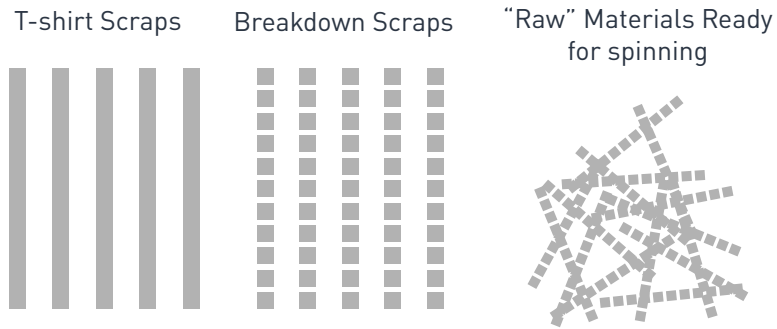


Once the materials have left the growing space, are spun into yarn, and woven into fabric, a product is created.

Here, a tshirt is made out of linen. Once the tshirt is sewn, it is transported to a local store and bought by someone within the community.

The Company System cont.



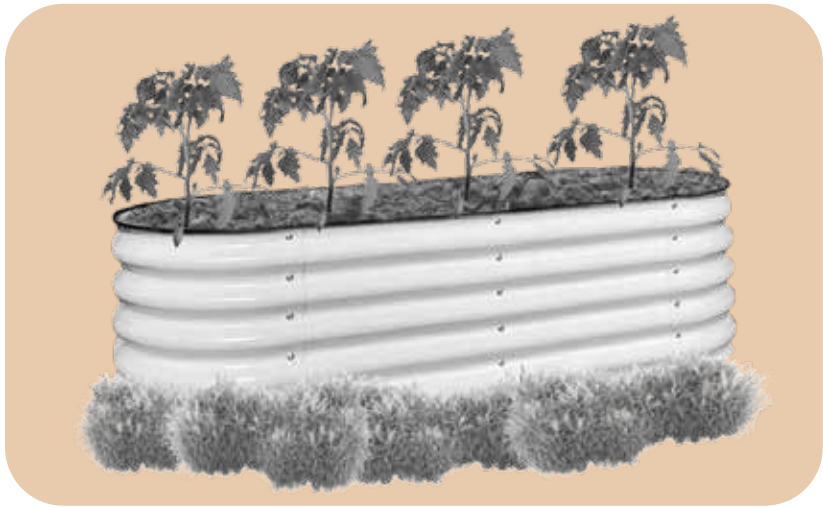


Scraps created from the trimming process are able to be remade as new material for creating the thread for the next tshirt.



After the seedling pots are planted, they are able to decompose in two weeks.

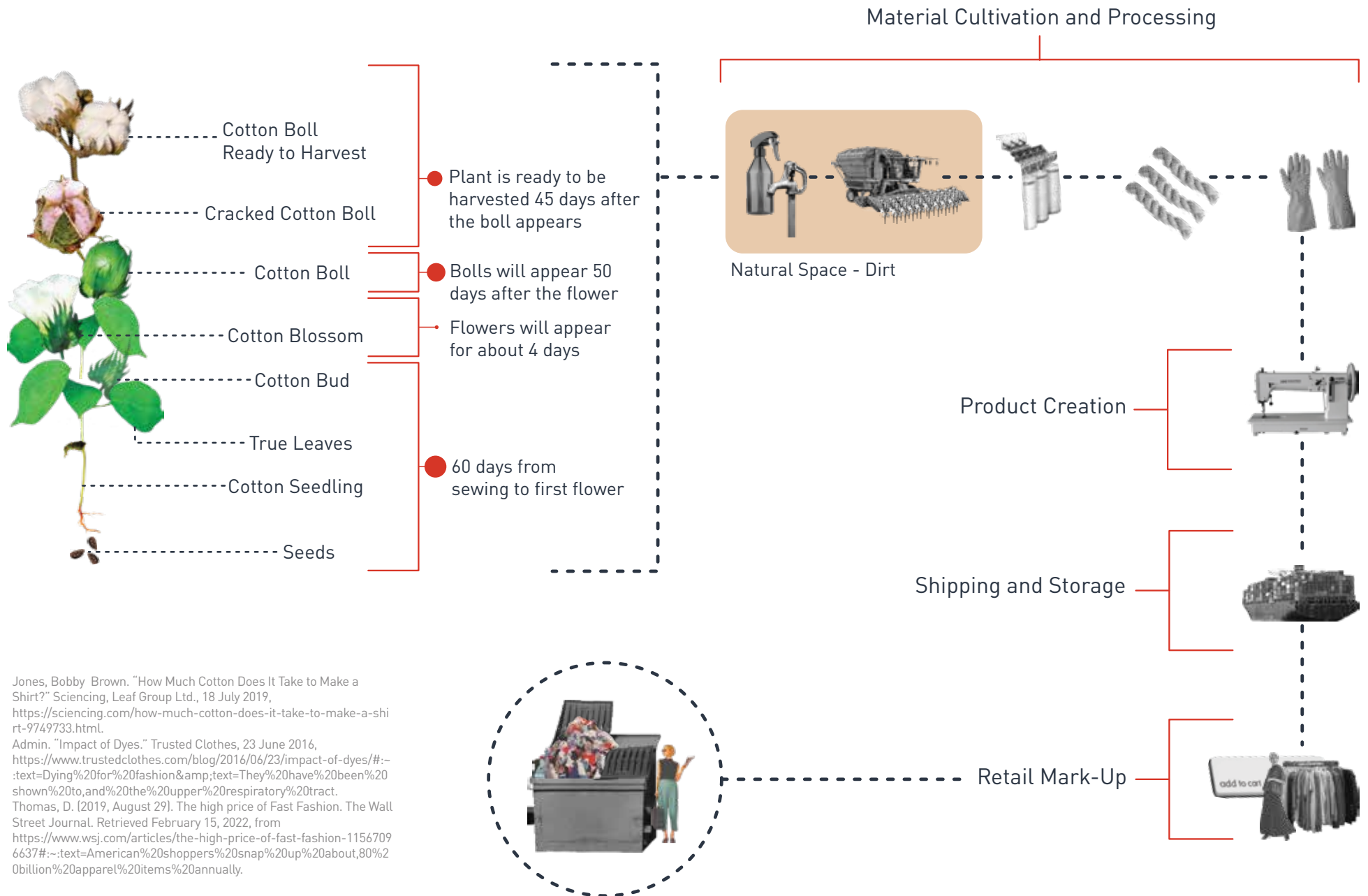
This ultimately allows the material from the tshirt to be reunited with the land in a symbiotic way which benefits the plants, people, and environment.



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Compared to Cotton



Jones, Bobby Brown. "How Much Cotton Does It Take to Make a Shirt?" Sciencing, Leaf Group Ltd., 18 July 2019, <https://sciencing.com/how-much-cotton-does-it-take-to-make-a-shirt-9749733.html>.

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Thomas, D. (2019, August 29). The high price of Fast Fashion. The Wall Street Journal. Retrieved February 15, 2022, from <https://www.wsj.com/articles/the-high-price-of-fast-fashion-11567096637#:~:text=American%20shoppers%20snap%20up%20about,80%20billion%20apparel%20items%20annually.>

Grow Zones

Looking at the zones in which Flax and Cotton can grow, it is evident that Flax is a much more resilient plant than Cotton.

By having the ability to grow in a larger variety of spaces, Flax can be distributed throughout the United States, creating a more diverse plant profile for each region that it grows in.

Flax Grow Zones

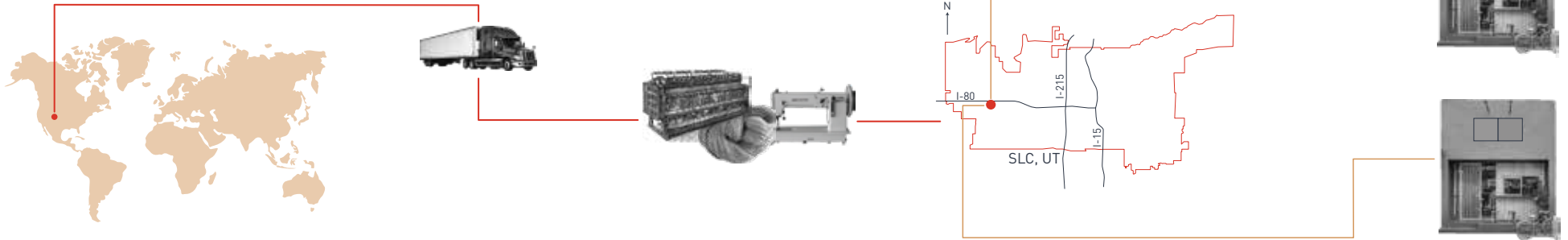


Cotton Grow Zones

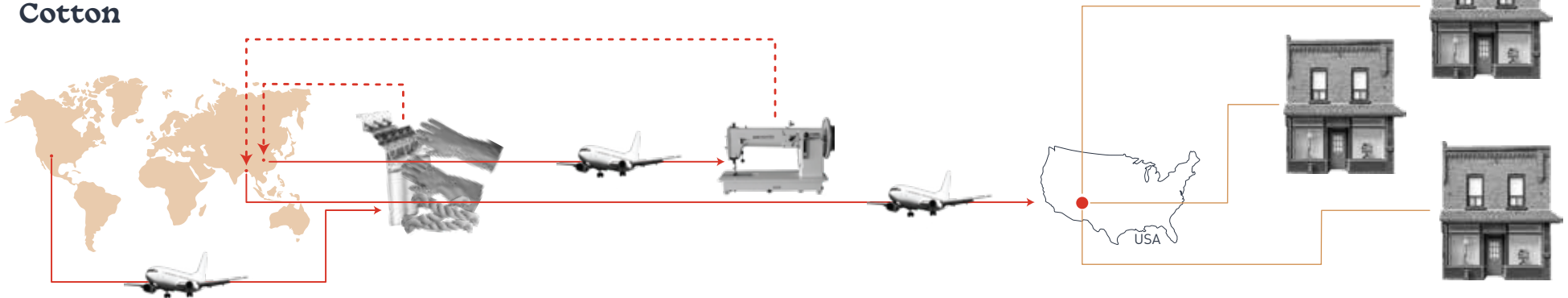


Travel

Linen

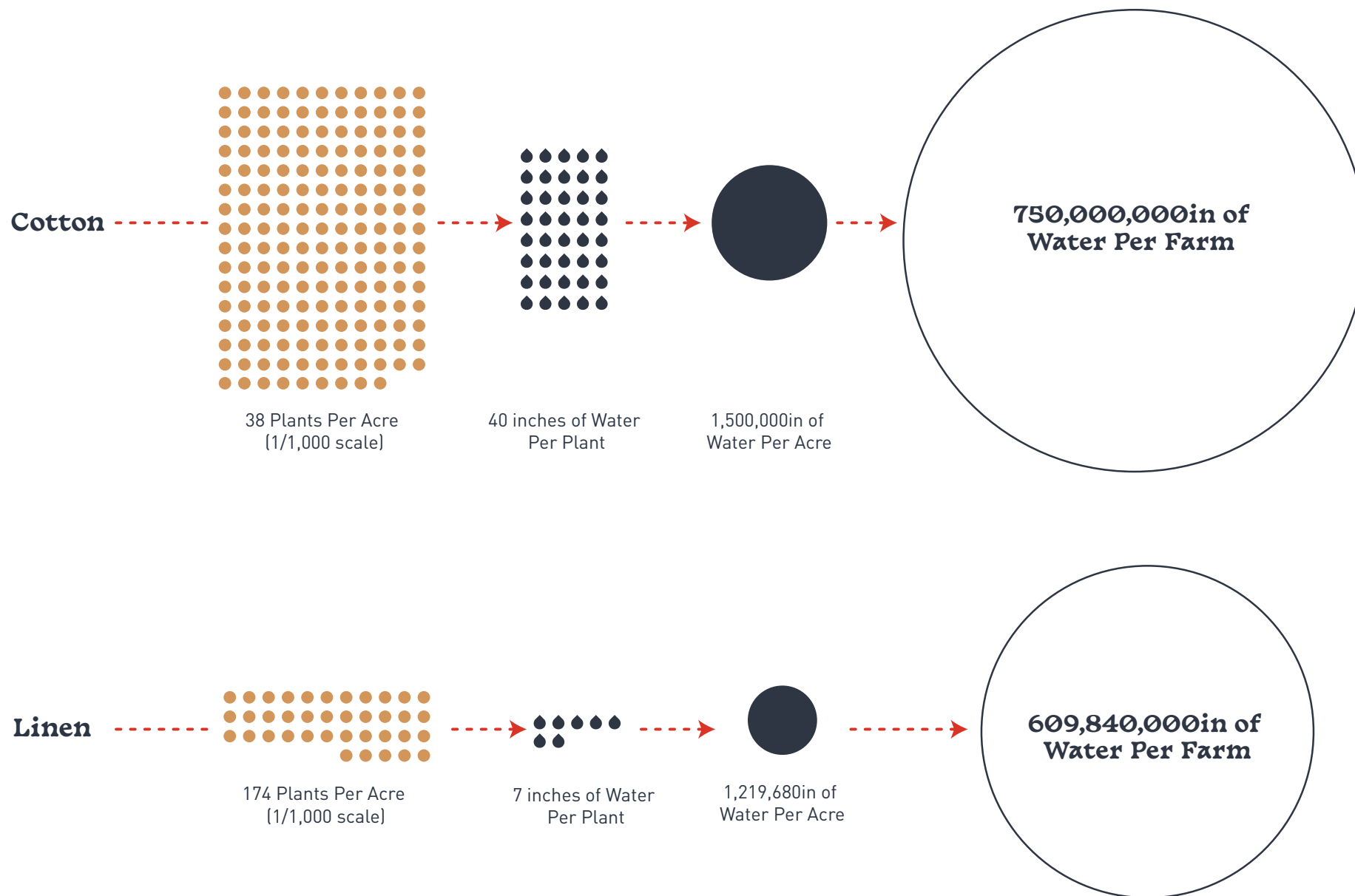


Cotton



Cotton products are shipped all around the world due to their processing and growing needs. However, with the Linen company model, there is less shipping involved since Flax plants are able to be planted in a wider variety of places and require less chemicals for processing.

Water Consumption



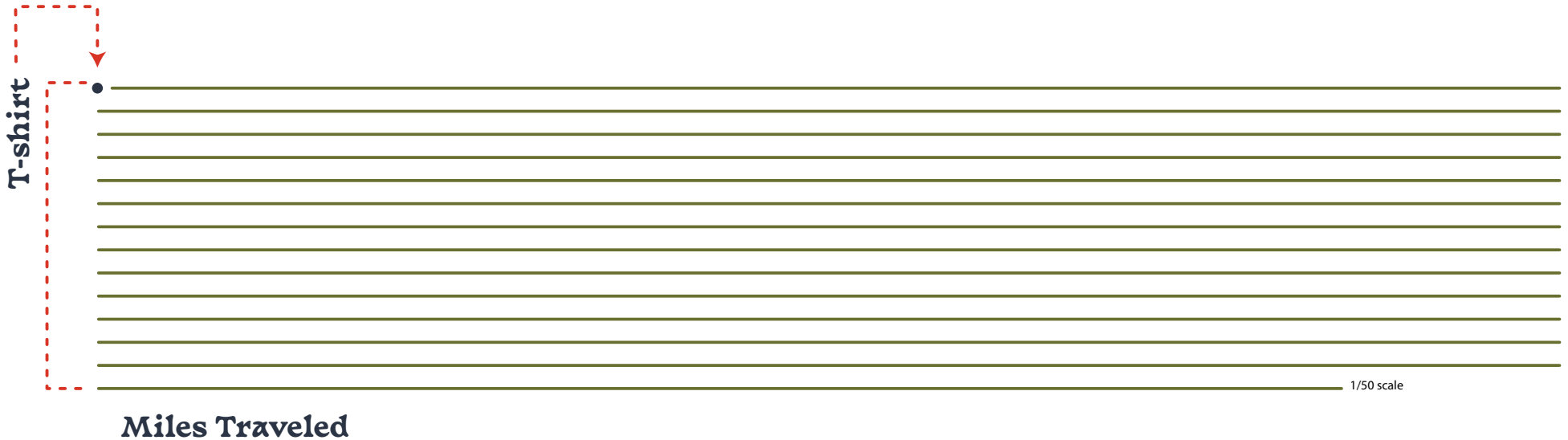
Product Transport

Linen



To get to a store in Salt Lake City, a Linen T-shirt grown in Green River, Utah must travel over 306 miles to get to the manufacturing factory and sold in local stores.

Cotton

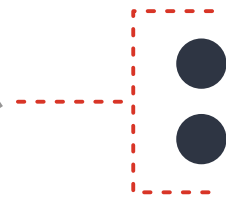


To get to a store in Salt Lake City, a cotton T-shirt made in Bangladesh has to travel over 7,985 miles.

T-shirt Decomp

Using less resources than Cotton, Linen is ultimately better for the environment and the desired symbiotic system that is currently absent from the fast fashion industry.

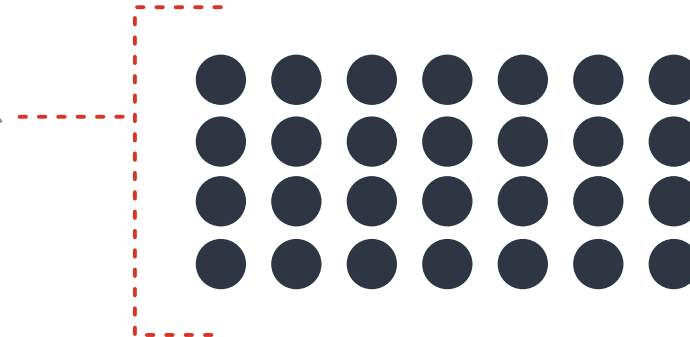
At the end of a tshirt's life, it is generally destined for the landfill and can sit there taking up space. However, Linen has the natural ability to quickly decompose when put in the correct environment. This being said, this company model turns used shirts into seedling starters to avoid shirts ending up in the landfill.



100% Linen tshirts can decompose in

2 Weeks

● 1 circle = 1 week



100% cotton tshirts can decompose in

5-6 months

● 1 circle = 1 week

Overall Impact



Circular Consumption

By creating a circular clothing system that mimics the mushroom's ability to breakdown material and recycle it, less clothing ends up in the landfill or needing to be exported for disposal.

This is a system which promotes circular living and making conscious buying decisions. By using Linen instead of Cotton, farms are able to be dispersed, factories are brought closer to city centers, and clothing is recycled in an environmentally conscious way.

Ultimately, with this project, I aim to bring clothing production back into our own hands by reducing the need for export, using other countries labor, and import back to the United States. By doing this labor wages are increase, quality clothing is made locally, and emissions are cut.

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