

NPNP

No Polystyrene, No Pain

Team 2

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Compare current state of NZ and Korea



Usage of plastic in packaging



South Korea Data – Incheon and Gyeong-gi Coast



PPPC data – what we found




Problems of polystyrene




Current state of food delivery



How to solve?



Circular economy

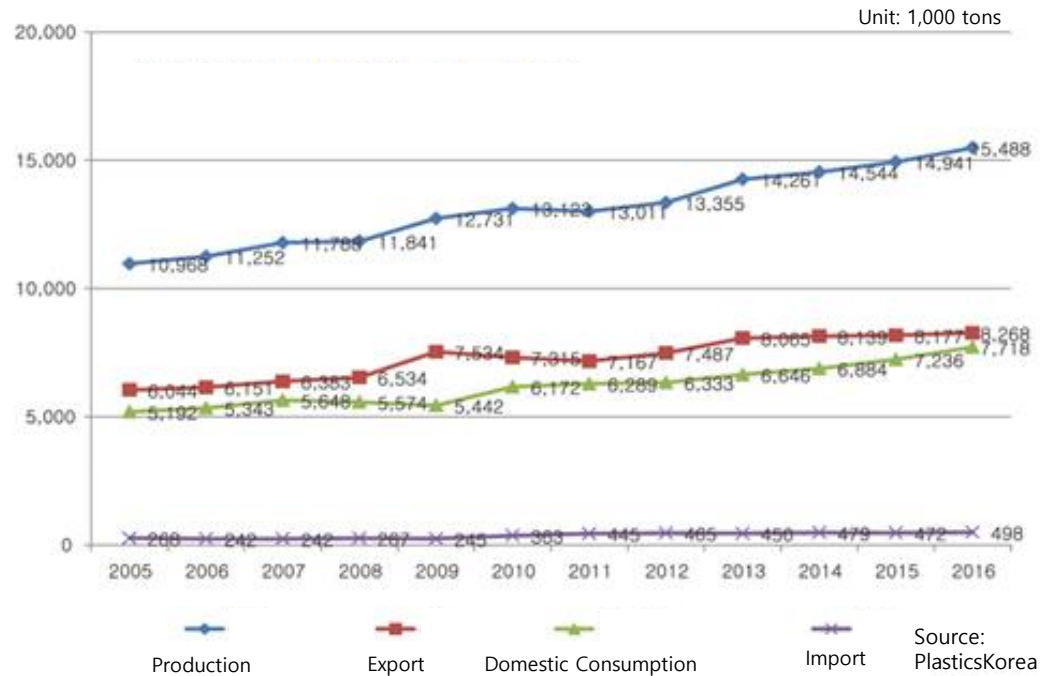


Solutions

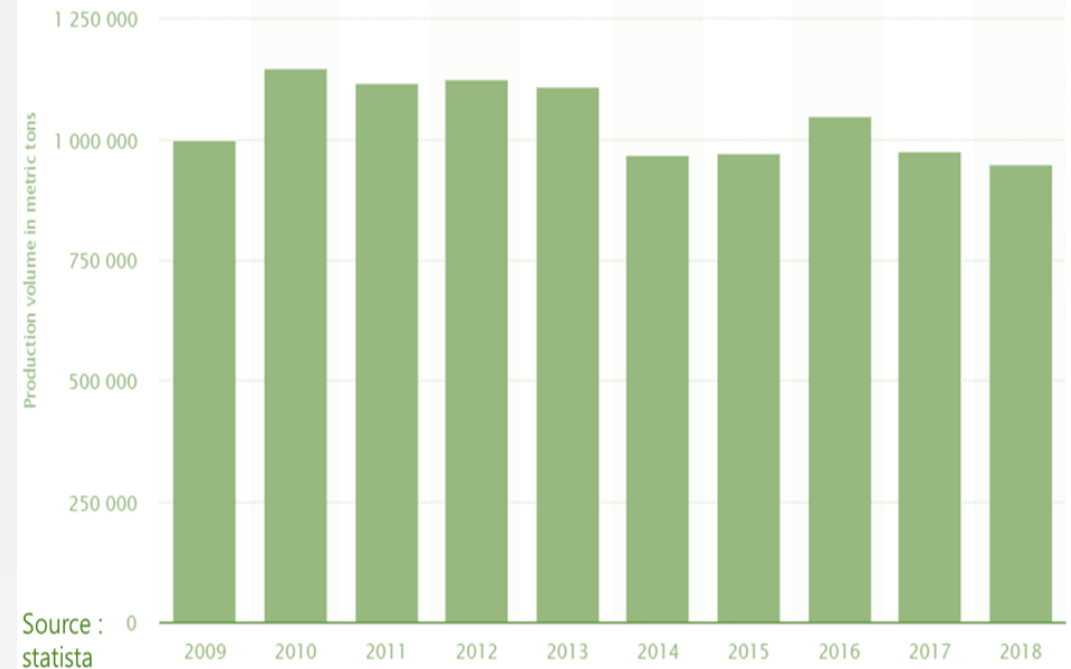
Compare current state of NZ and Korea

Usage of plastic in packaging in Korea

Volume of plastics in Korea <Production, Export, Import, Consumption>



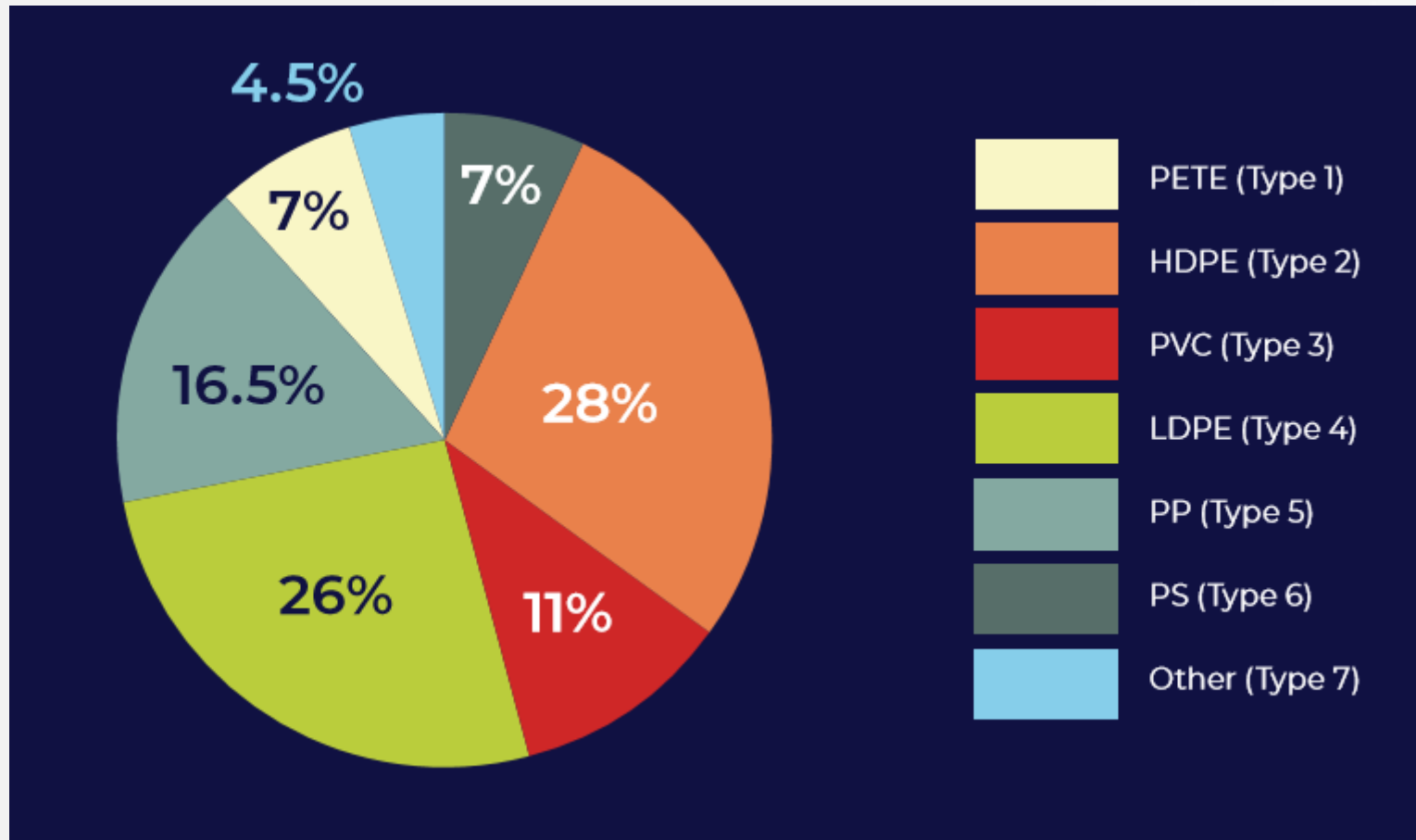
Production volume of polystyrene in South Korea from 2009 to 2018



The proportion of polystyrene production volume is around 7%.

Compare current state of NZ and Korea

Usage of plastic in packaging in NZ



Source : Circular Economy Accelerator

South Korea Data

Incheon and Gyeong-gi Coast



84 to 99 percent of the total fine plastics were taken up by ESP, mostly known as Polystyrene

Source : Industrial-Academic Cooperation Group of Incheon National University

PPPC Data – What we found

Sampling at Napier road from 2019 to 2020

2019 Data

	Site1	Site2	Site3
PLASTICS	116	180	510
FOAMED PLASTIC/PLYSTRENE	33	49	41
CLOTHING/ TEXTILES/ LEATHER/ CARPETS	4	2	7
GLASS & CERAMIC	0	0	0
METAL	48	1	20
PAPER & CARDBOARD	21	0	1
RUBBER	5	0	2
WOOD & TIMBER / BRICK, CONCRETE & RUBBLE MISC OTHER	0	0	0
HAZARDOUS & SPECIAL	1	0	0
TOTAL	228	232	581



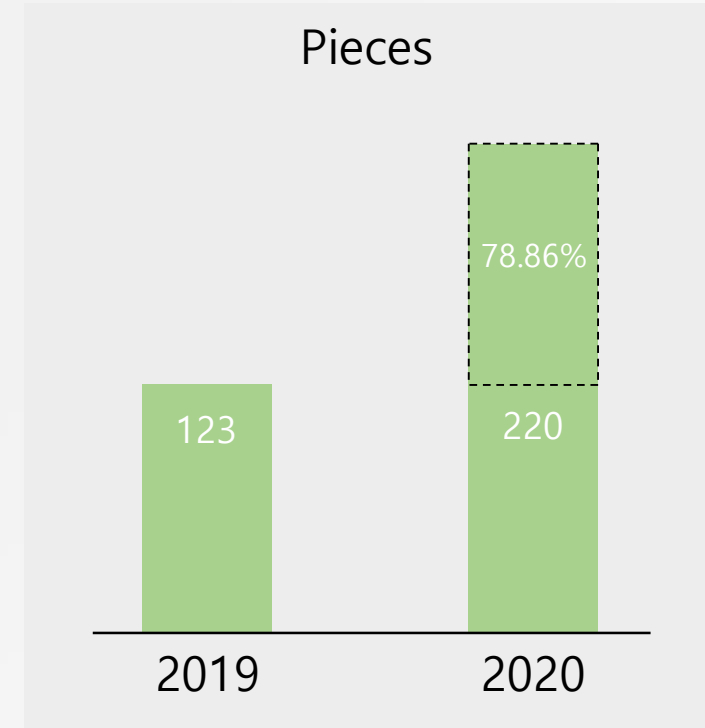
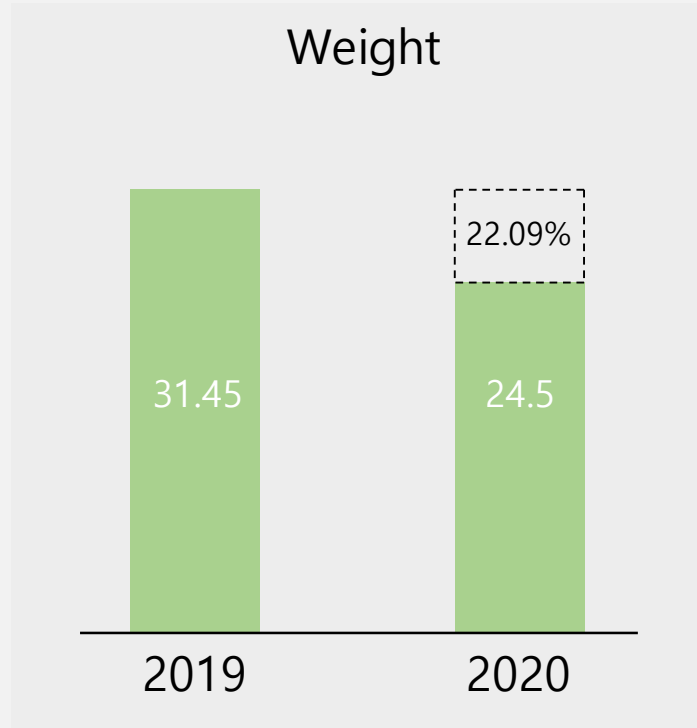
2020 Data

	Site1	Site2	Site3
PLASTICS	74	48	31
FOAMED PLASTIC/PLYSTRENE	214	2	6
CLOTHING/ TEXTILES/ LEATHER/ CARPETS	1	0	1
GLASS & CERAMIC	0	0	0
METAL	9	3	3
PAPER & CARDBOARD	0	0	0
RUBBER	2	1	0
WOOD & TIMBER / BRICK, CONCRETE & RUBBLE MISC OTHER	5	3	0
HAZARDOUS & SPECIAL	0	0	0
TOTAL	305	57	41

Source : Manawatu river, Source to sea

PPPC Data – What we found

Sampling at Napier road



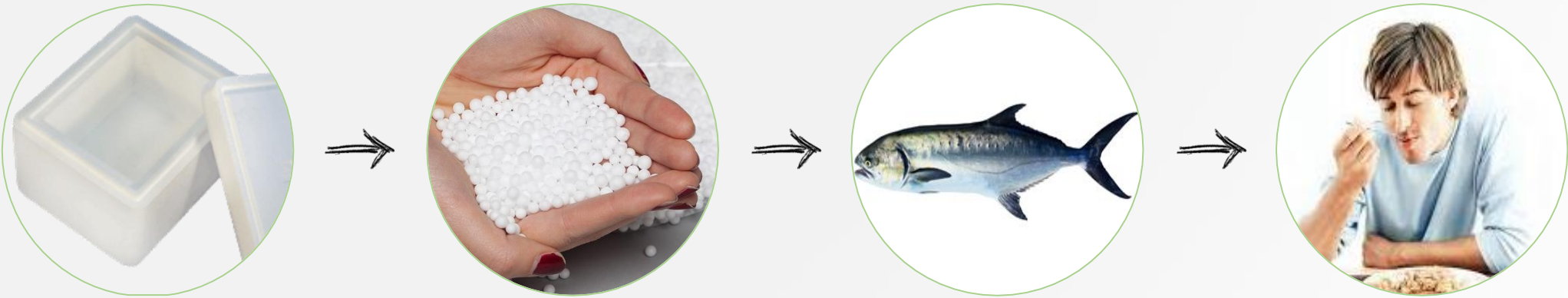
Source : Manawatu river, Source to sea

Weight has decreased 22.09%, But pieces has increased 78.86%

Problems of Polystyrene

How Humans take Polystyrene

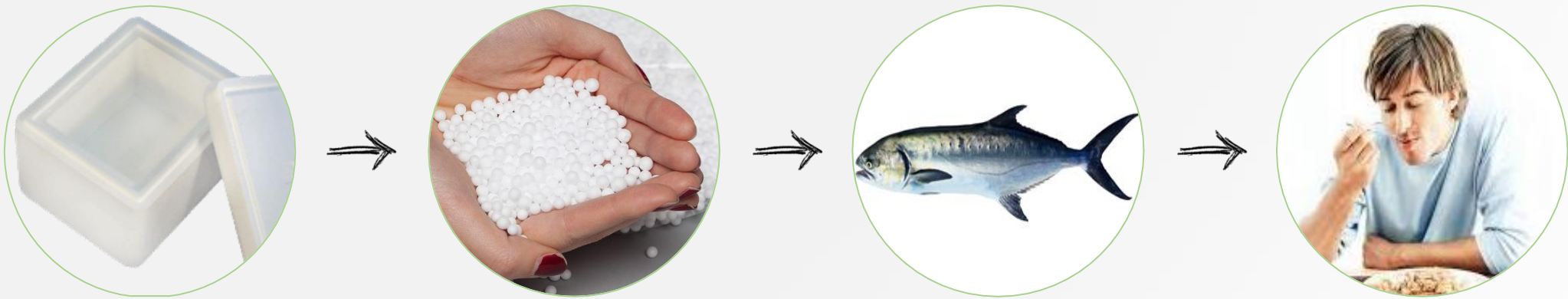
Circulation of polystyrene waste



Problems of Polystyrene

How Humans take Polystyrene

Circulation of polystyrene waste

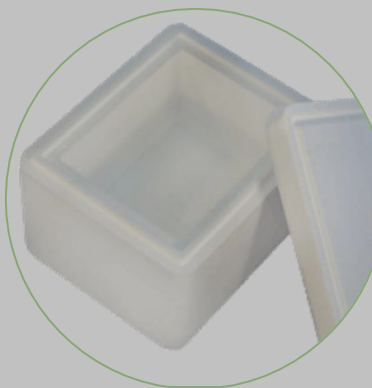


'Even though we recycle the polystyrene, it can't be recycled as itself and **it takes more materials to be recycled which cause more pollution.'** –Earth Resource Foundation

Problems of Polystyrene

How Humans take Polystyrene

Circulation of



Amount of microplastic intake per person

2,000 microplastics are ingested by a person in a week

Calculated by weight

Week



A credit card
5g

Month



A toothbrush
21g

Main ingestion pathway



1,769
Water



182
Crustacean



11
Salt



10
Beer

Source : *WWE*

연합뉴스

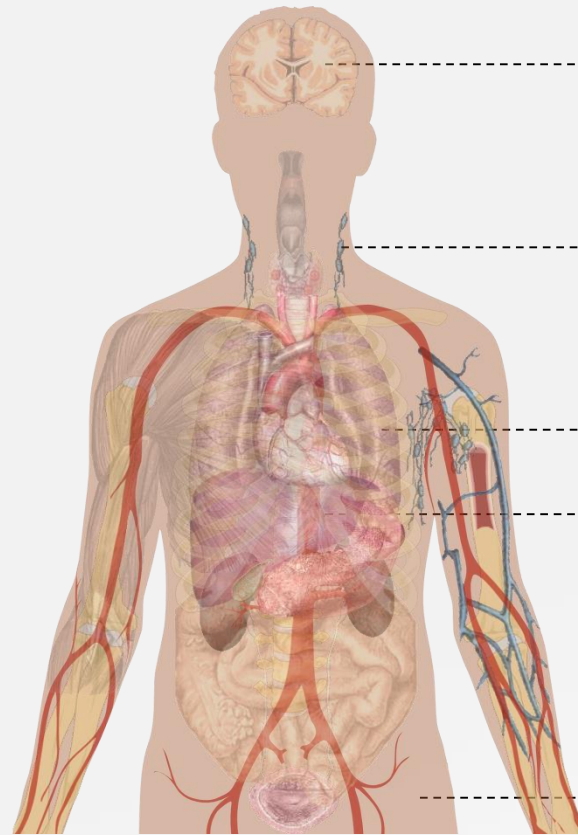


Problems of Polystyrene

Toxicity of Polystyrene



Organs that are affected by Styrene



Brain

Nervous system

Lungs

Liver

Genes and immune system

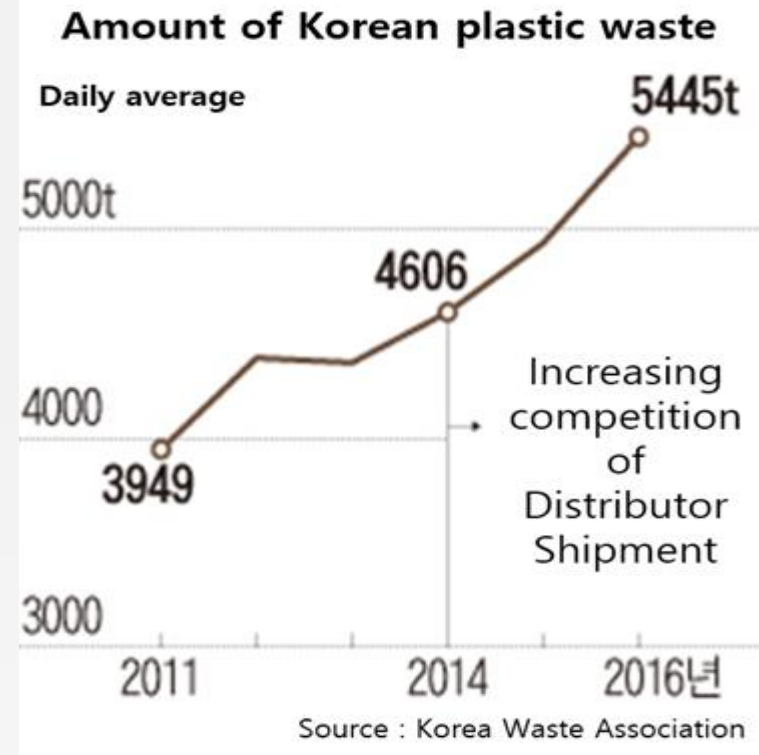
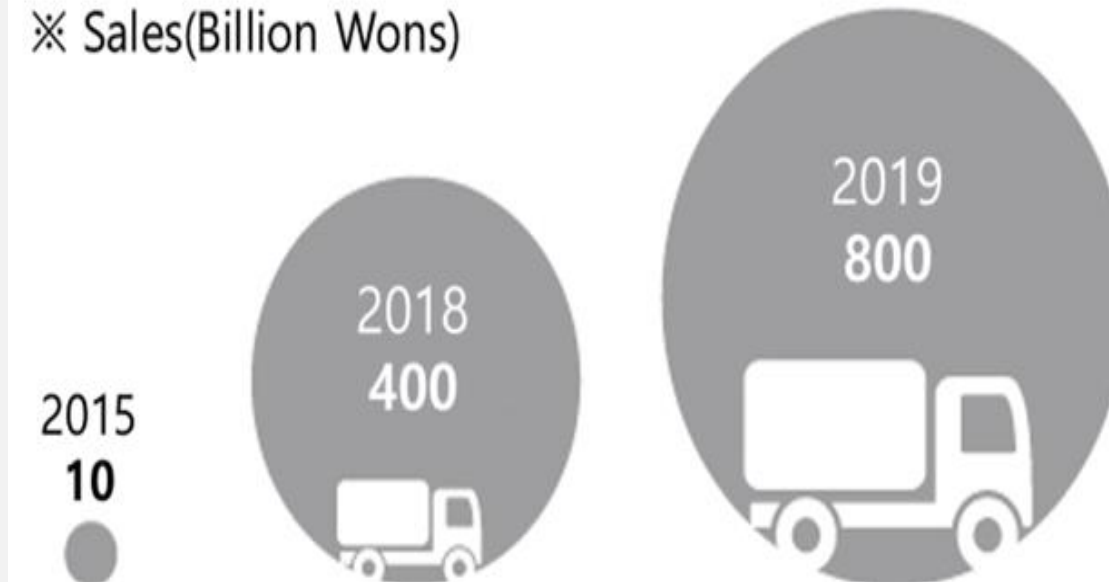
Source : Waste4Change

Current state of food delivery

Current state of food delivery_Korea

The growing market for fresh food delivery

※ Sales(Billion Wons)



With the expansion of the fresh food delivery market, the usage of polystyrene increases, and subsequently plastic waste in Korea increases over time.

Current state of food delivery

Current state of food delivery_NZ(MY FOOD BAG)



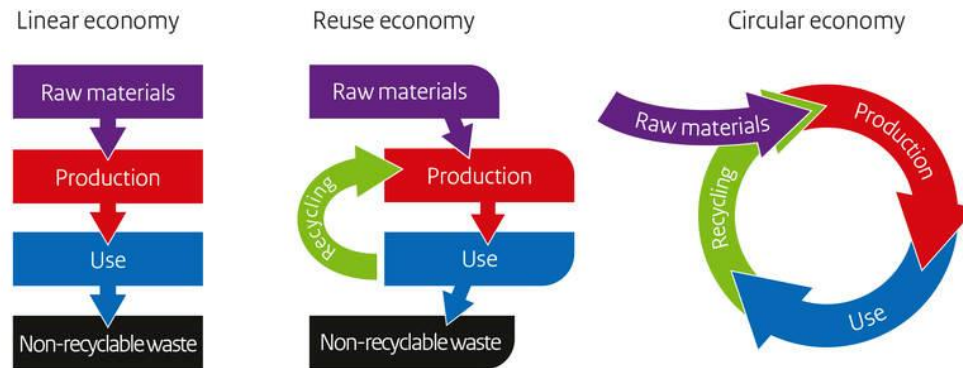
At the time of Waterman's investment, the company was valued at \$120m and company records showed the investment firm owned 70 per cent of the company. Also the most recent reported figure of the company's revenue was \$150m annually.

Circular Economy

(1) What is Circular Economy?

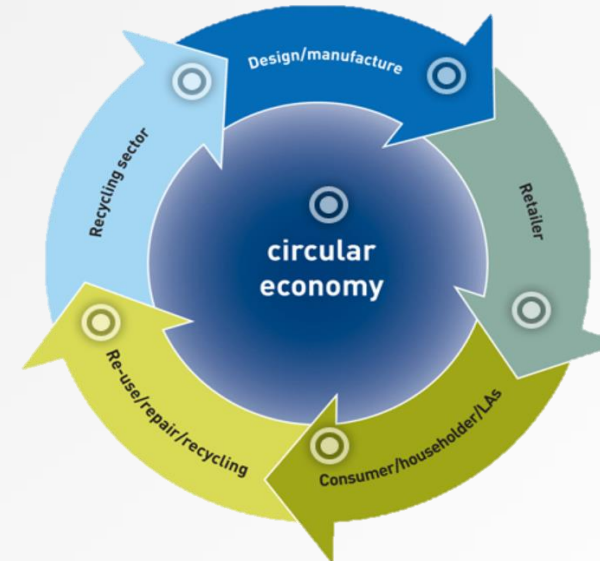
Concept

From a linear to a circular economy



Source : Governments of the Netherlands

A circular economy is an economic system aimed at eliminating waste and the continual use of resources.



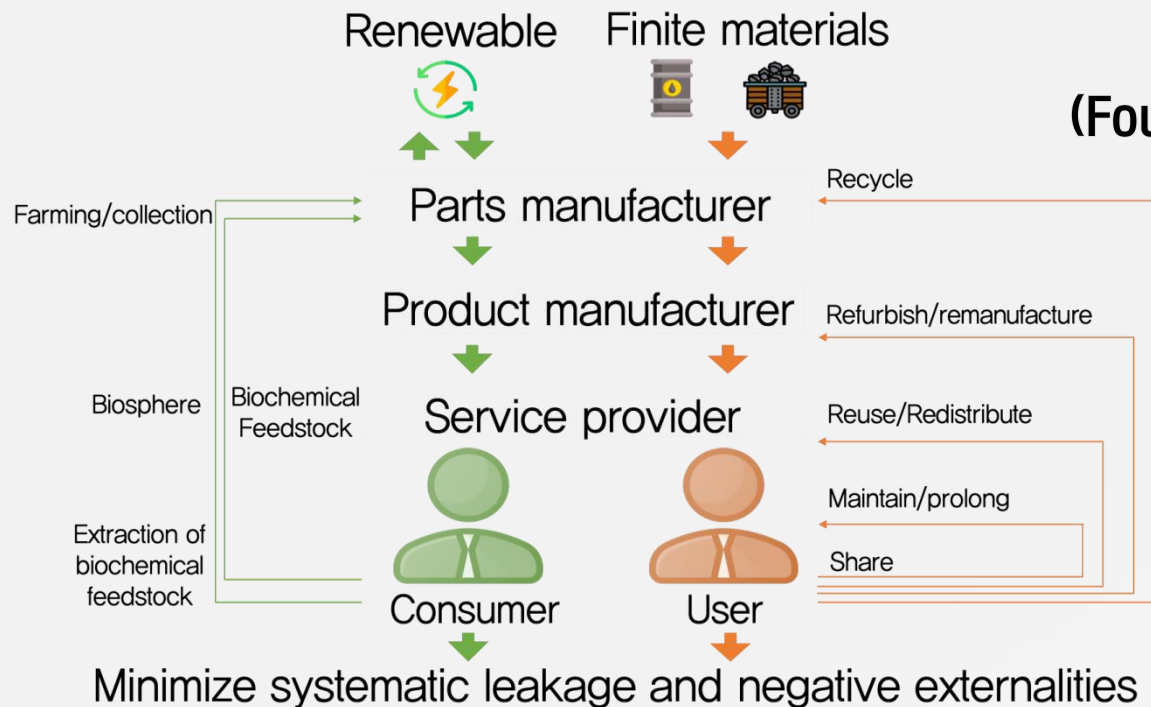
Source : Wrap

Circular Economy

(2) What is its principles?



Principles



Three Principles (Foundations of the new circular economy system)

- Design out waste and pollution
- Keep products and materials in use
- Regenerate natural systems

Solutions & Suggestions

(1) Corporate Level

No Polystyrene



Source : Market Kurly

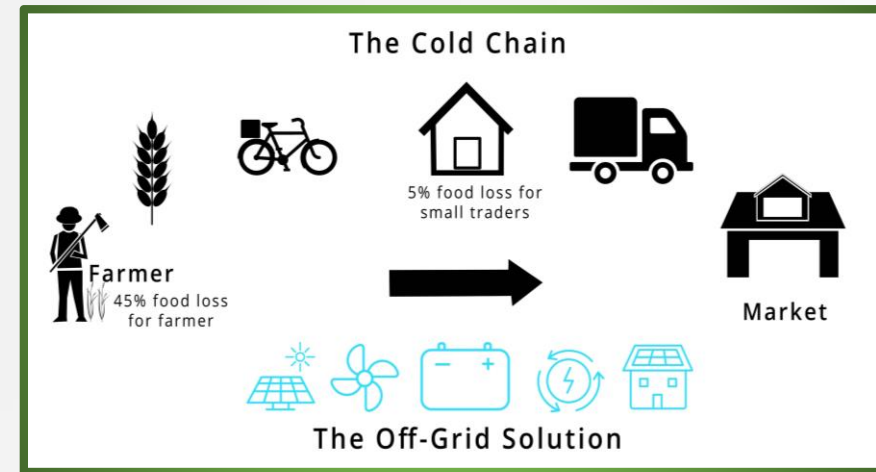
Market Kurly
"All Paper Challenge"



Source : SSG

SSG
I'll be bag

Cold Chain System



Source : ideastoimpact

Cold chain technology is one of the most efficient solutions to improve food packaging and storage.

Solutions & Suggestions

(2) Government Level

"Ban Polystyrene" Policy



Source : NZ Environment Ministry

Single-use plastic shopping bags are banned in New Zealand from 1 July 2019.



New Policy to Ban Polystyrene

Thank you

Team 2

Kyungsu Kang

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