CLOSING THE CIRCLE

Reducing Plastic Pollution and Promoting Green Businesses

Introduction to Circular Economy

Dave Albao and Dr. Marianne Bigum

The views expressed in this material are the views of the author/s and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy of the data included in this presentation and accepts no responsibility for any consequence of their use. The countries listed in this presentation do not imply any view on ADB's part as to sovereignty or independent status or necessarily conform to ADB's terminology.

ADB

ABOUT CLOSING THE CIRCLE

The Environment TG and the Urban SG is running a four-part sprint series called: **Closing the Circle: Reducing Plastic Pollution and Promoting Green Businesses**, with a special session tailored for PSOD.

The training aims to introduce circular plastics economy (CPE) and upskill ADB personnel in identifying opportunities to mainstream CPE in project preparation and operations. Participants are encouraged to attend all sessions, but each one is designed to be stand-alone.

ABOUT

WHAT ARE THREE WORDS THAT COME TO MIND WHEN YOU HEAR "CIRCULAR ECONOMY"?

REDUCE, REUSE, RECYCLE

SUPPLY-CHAIN, SUSTAINABILITY, CHALLENGE

ADB STRATEGY 2030

SOLID WASTE MANAGEMENT, 3RS, JOB CREATION

SUSTAINABILITY, GREEN, DEVELOPMENT

CLOSED SYSTEM, SUSTAINABLE, ORGANIC

PLASTICS, OCEANS, RECYCLE

EFFICIENCY, CIRCULATION, REGENERATION

PRO-ENVIRONMENT; ZERO-WASTE; ECONOMIC

RESILIENT, SUSTAINABLE, INCLUSIVE

REPAIR, REUSE, REPURPOSE

WASTE, SANITATION, RECYCLING

PRO-ENVIRONMENT; ZERO-WASTE; ECONOMIC

SUSTAINABLE CLEAN ENVIRONMENT

CLOSING THE CIRCLE

Reducing Plastic Pollution and Promoting Green Businesses

LET'S GET IN THE LOOP.

What is a circular economy?

But first, what is NOT a circular economy?

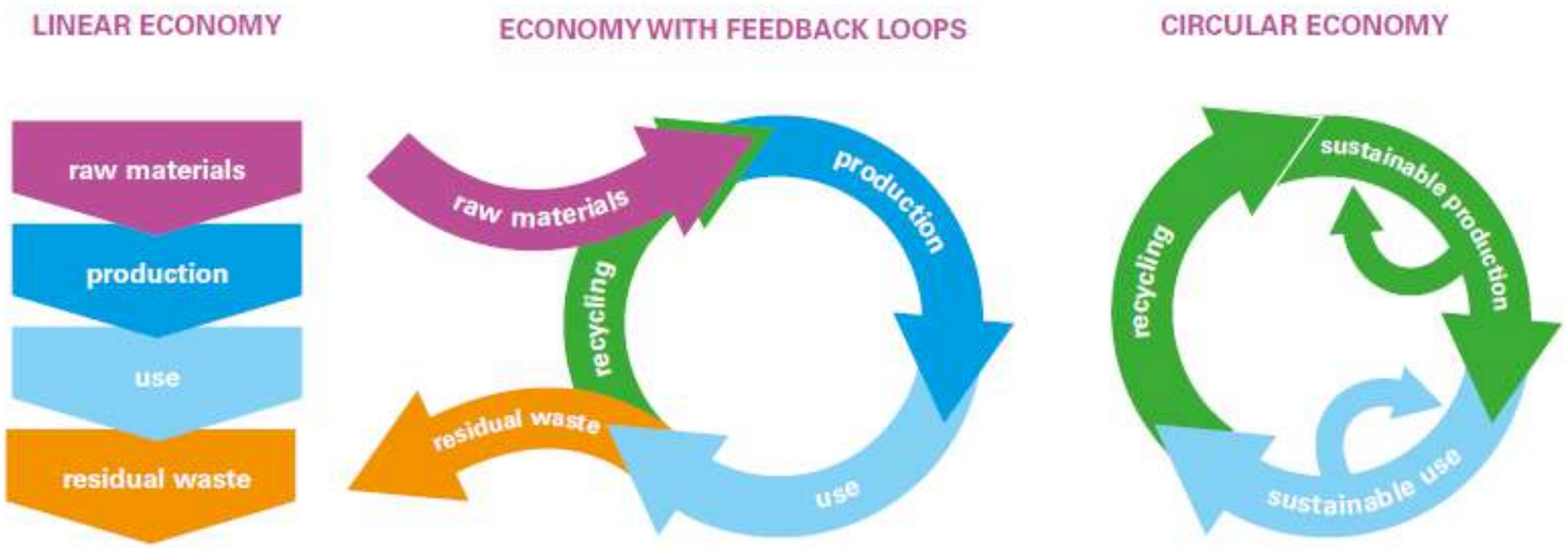
Diagram: Wautelet, Thibaut. (2018). Exploring the role of independent retailers in the circular economy: a case study approach.

The Principles of a Circular Economy

Source: Ellen MacArthur Foundation

THE MILKMAN MODEL

Where are we now?



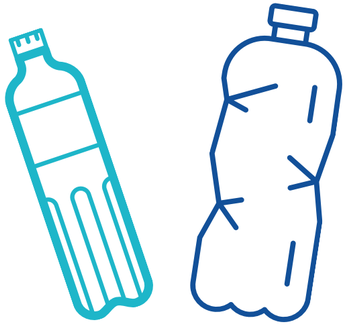
Source: Circular Economy From wish to Practice (2015) - RLI Netherlands

Plastic: Is it BFF material?

A Love Story

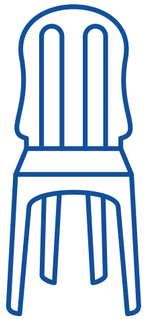
PROTECTIVE

Keeps pests, microbes, and humidity away from food



LIGHT

Makes it easy to transport goods, especially to isolated islands

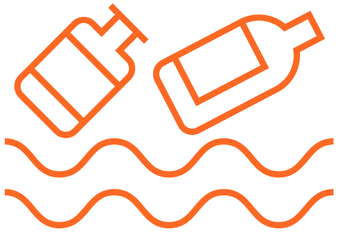


BUILT TO LAST

Durable and reusable

Plastic: Is it BFF material?

A Bad Romance



HARMS

About 8 million tonnes of plastic (especially those with little or no value) end up in our oceans annually, threatening habitats and species

COULD CAUSE GOING BROKE

Causes decline in oceans' economic benefits of up to $2.5 trillion per year* – particularly in fisheries, aquaculture, tourism

NOT A MATCH MADE IN HEAVEN

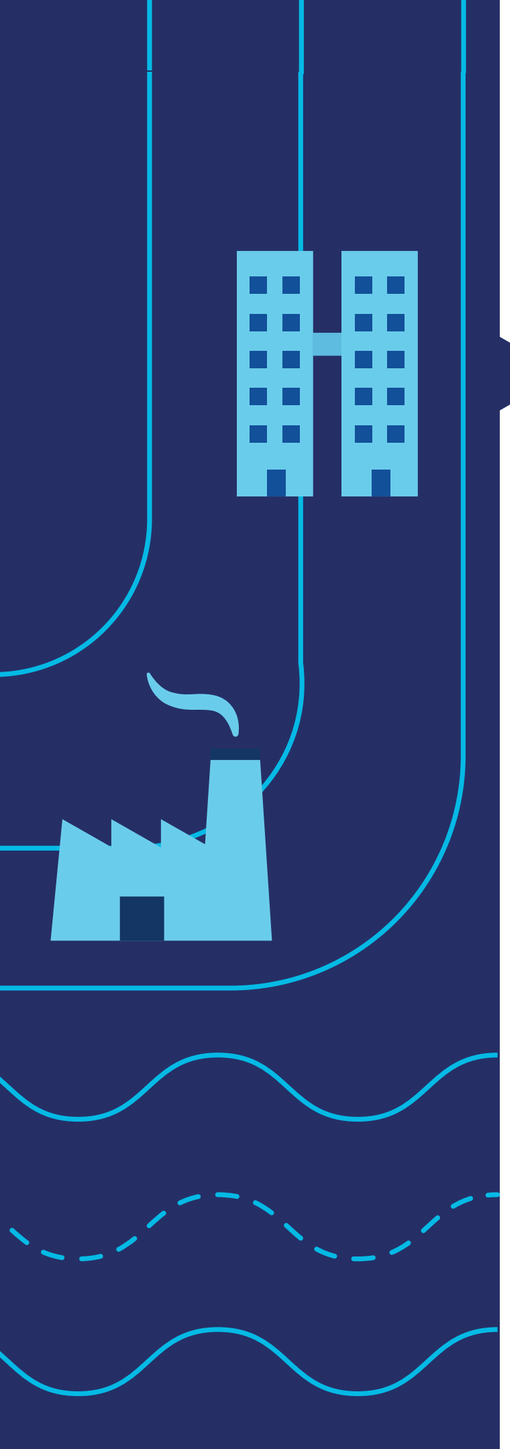
Infrastructure and logistics for solid waste management are either not in place or not efficient for it to be recycled

**Source: Global ecological, social and economic impacts of marine plastic (2019)*

Taken in the waters off northern Greece
Nominated for the Ocean Photography Award 2021
Nikos Samaras

Impact of COVID-19 on the circular plastics economy

- Necessary use of disposable medical equipment and lack of facilities to process medical waste
- Loss of funding for environmental organizations
- Loss of mobility for fieldwork and research
- Increase in e-commerce activity and food deliveries



Circular Economy and the Sustainable Development Goals

How can it contribute to the 2030 Agenda?

THE GLOBAL GOALS

Zoom in and out:
How can circular economy contribute to each SDG?

What cross-cutting issues would need to be addressed for a circular plastics economy?

ACTION HIERARCHY IN THE CIRCULAR ECONOMY

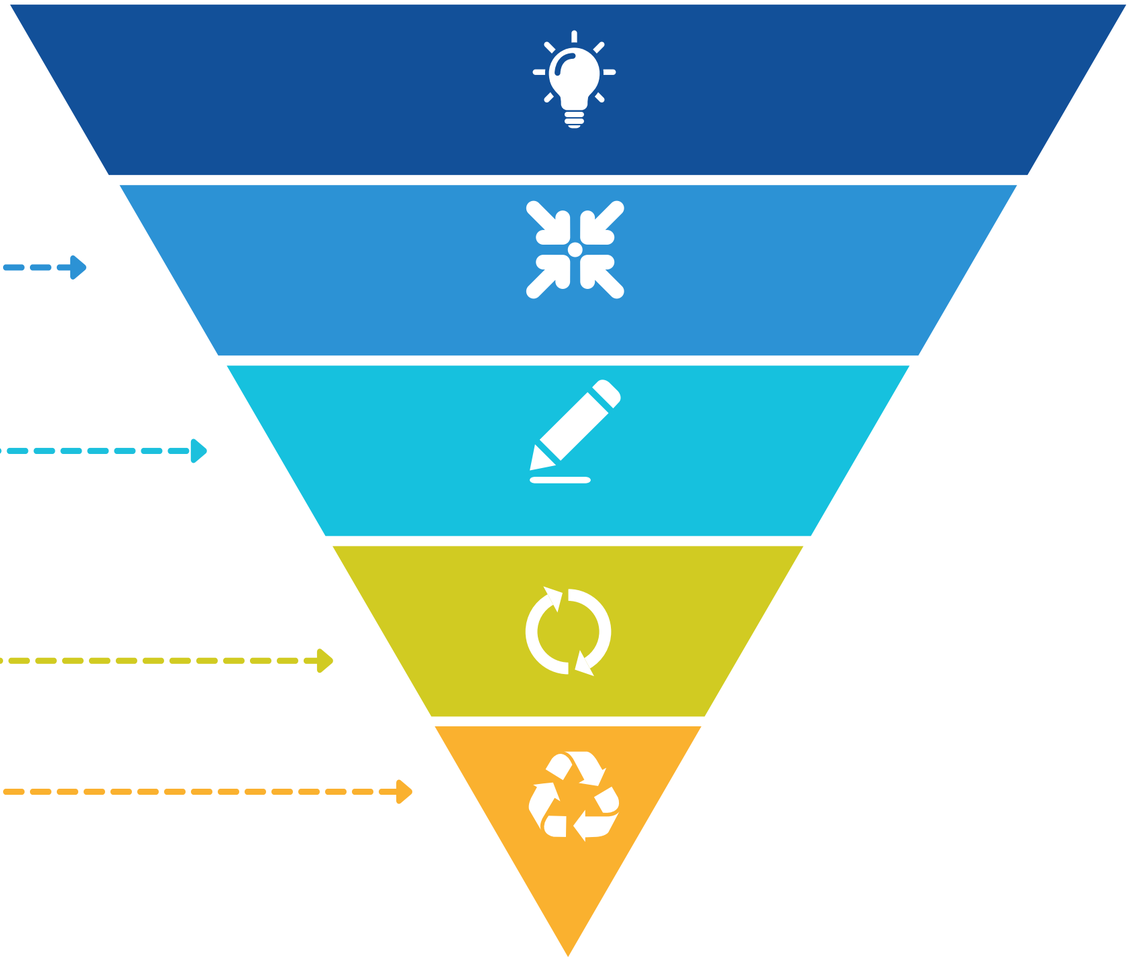
RETHINK
Reduce and Conserve Materials

REDUCE
Retain Value and Function

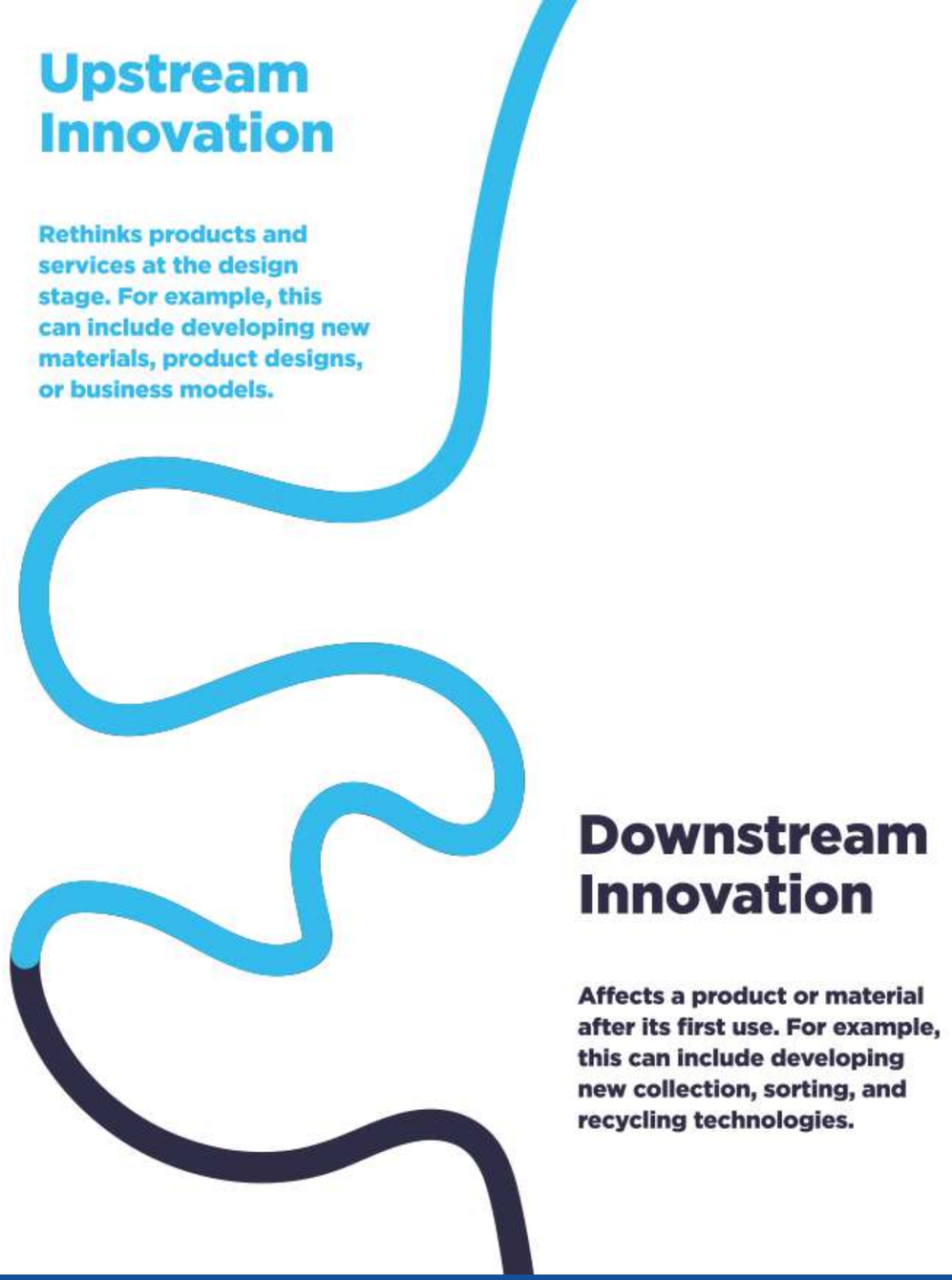
REDESIGN
Prepare for Reuse and Recycling

REUSE

RECYCLE



How and what can we reimagine for the future to be circular?



Source: Ellen MacArthur Foundation

CHALLENGES

Financial

- Upfront investment
- High transition costs
- Economic viability of recycling

Institutional

- The linear mindset has deep roots
- Complicated or inflexible regulatory structures
- Lack of political will

CHALLENGES

Social

Lack of awareness and sense of urgency

Resistance to change

Technical

Logistics and reverse logistics

Designed to dispose or to be phased out

Lack of information exchange

BENEFITS

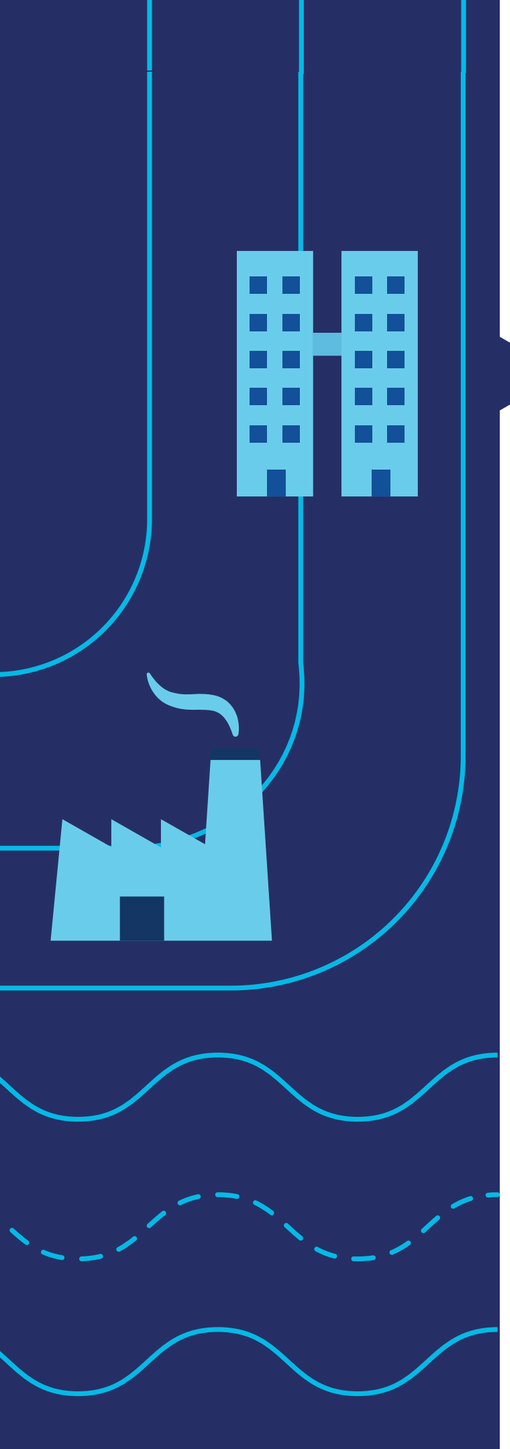
Lower pollution

Strengthened local communities

Employment opportunities

Increase in productivity

Increase in savings



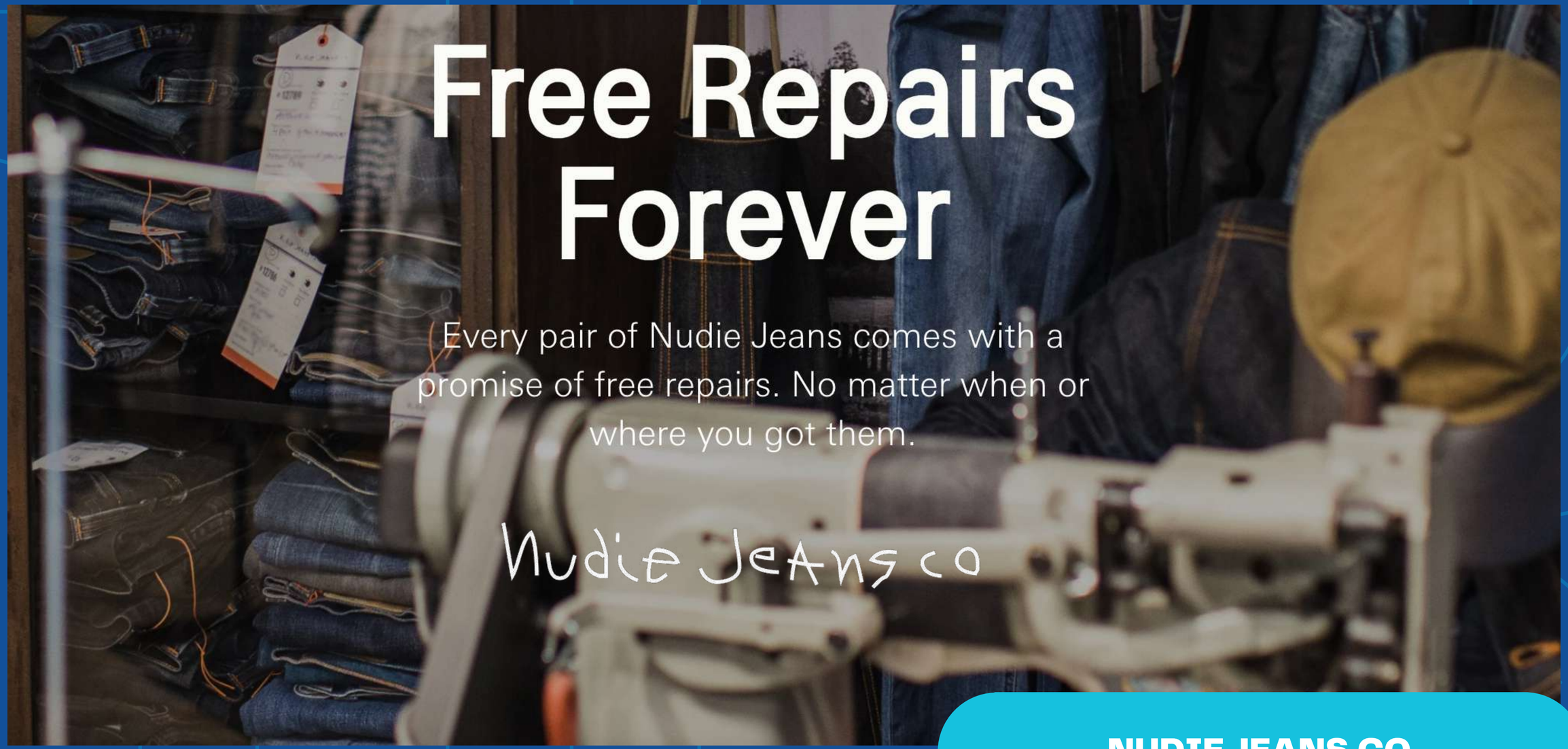
Circular models in practice

"WALA USIK" SARI-SARI STORE / REFILLING STATION

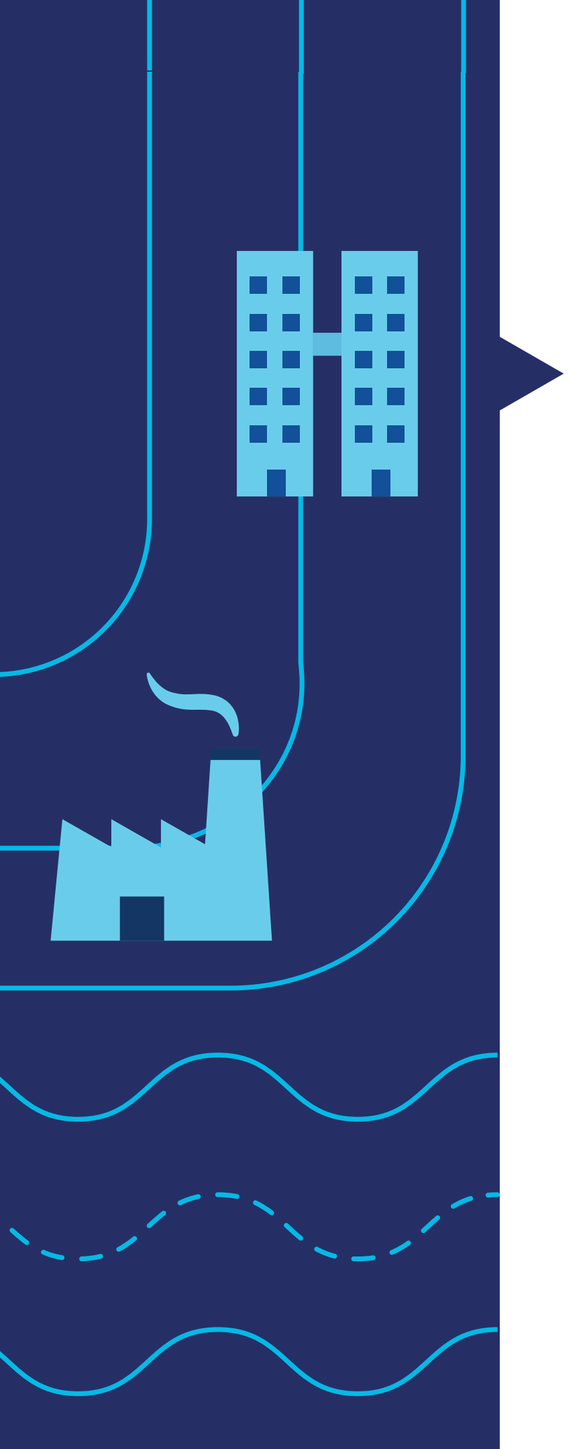

SK SIRI
barePack
TAKE AWAY WITHOUT
DISPOSABLES HERE!
Official Partner


barePack
barePack

BAREPACK



NUDIE JEANS CO



Let's look at some numbers.

$4.5 trillion
Global potential growth by 2030 [1]

€900 billion
Additional GDP by 2030 [2]

€604 billion
Annual savings from reduced costs of waste production/disposal [3]

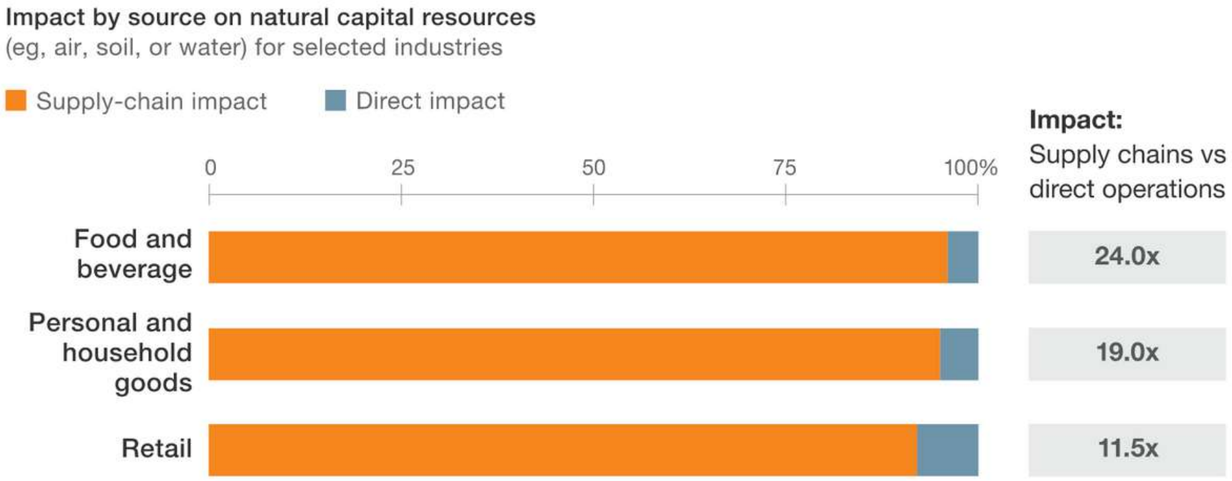
17–25%
Need for raw material in EU by 2030 [4]

€900 billion
Annual reduced costs in mobility, food and built environment [5]

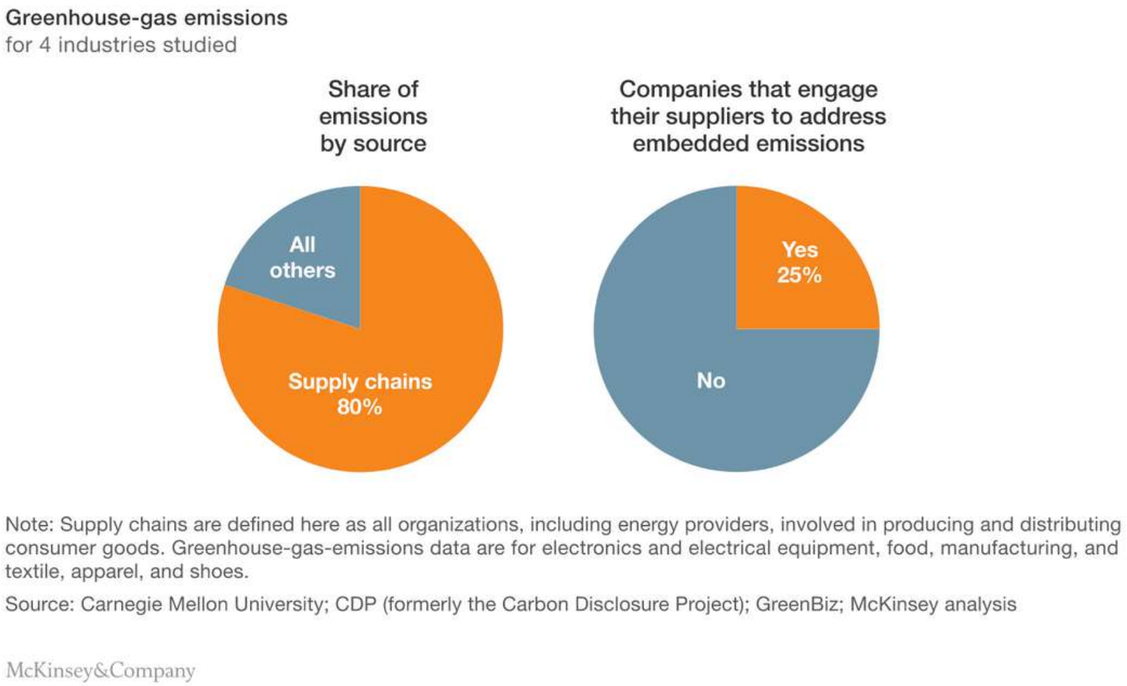
39%
Reduced global emissions by 2032 [6]

Sources: 1. Circular economy. Dallo spreco al valore (2015); 2. Growth Within - Ellen MacArthur Foundation; 3 & 5. The opportunities to business of improving resource efficiency , EU (2013); 4.Macroeconomic modelling of sustainable development and the links between the economy and the environment (2011); 6. The Circularity Gap (2021)

Most of the environmental impact associated with the consumer sector is embedded in supply chains.



Source: Mapping the benefits of a circular economy, McKinsey&Company (2017)

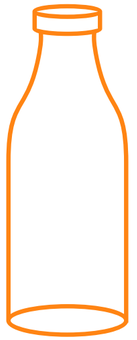


CLOSING THE CIRCLE

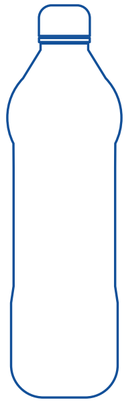
Reducing Plastic Pollution and Promoting Green Businesses

LET'S CIRCLE BACK.

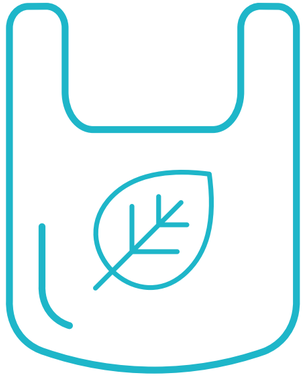
What is circular by design?



glass bottle

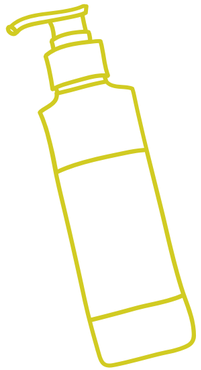


clear PET bottle

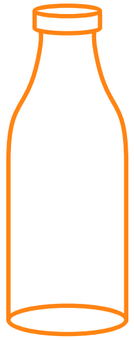


compostable bag

reusable canvas bag

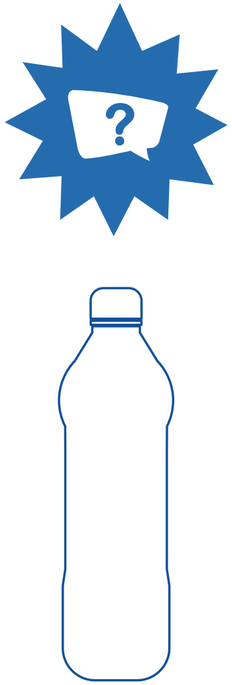


refill system



Circular: Glass bottles

Almost infinitely recyclable when in a closed bottle-to-bottle loop

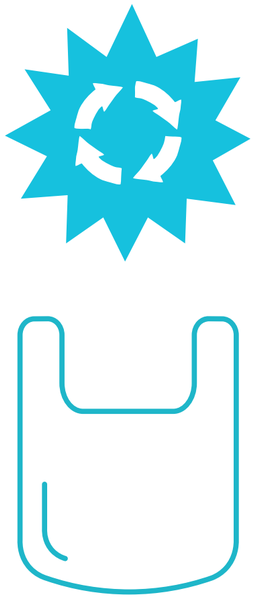


Circular: PET bottles

- PET bottles are highly recyclable
- Returned via a recycling program to a facility that sorts, cleans, and transforms the plastic into rPET flakes or pellets
- PET flakes/pellets can then be reused to make new bottles
- rPET has a lower carbon footprint than virgin PET.

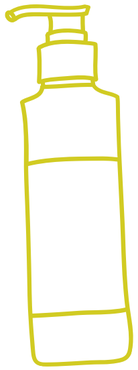
Linear: Compostable plastic bags

- The standards for biodegradability says that it will require 58 degree celsius, for 3 months and with oxygen present to degrade, conditions not found in the marine environment or nature.
- The biodegradation of these will only take place in specialized industrial facilities. People will still have to sort their waste and that there will still need to be invested in efficient waste collection systems.



Circular: Reusable bags

- Rethinks by reducing and conserving materials by eliminating single-use bags
- Retains value and function



Circular: Refill system

- Reusable bottles
- Eliminates single-use packaging