

# Introduction to Circular Economy

**SWITCH-Asia Leadership Academy**

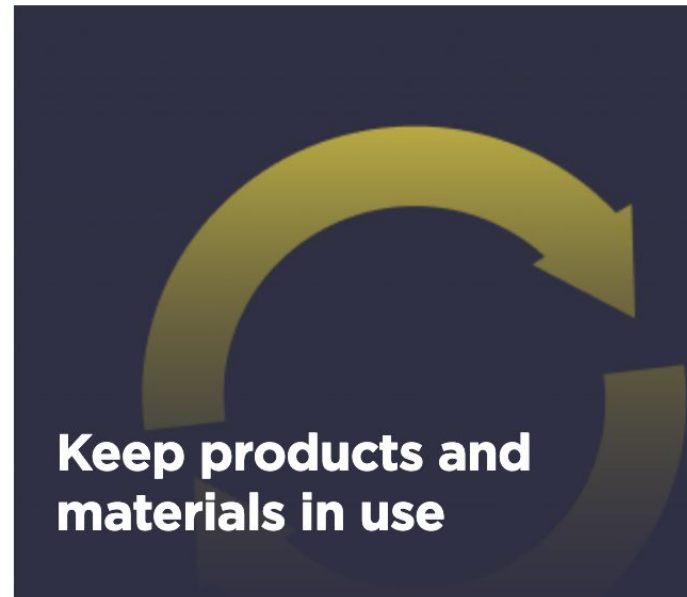
Chuan Fan

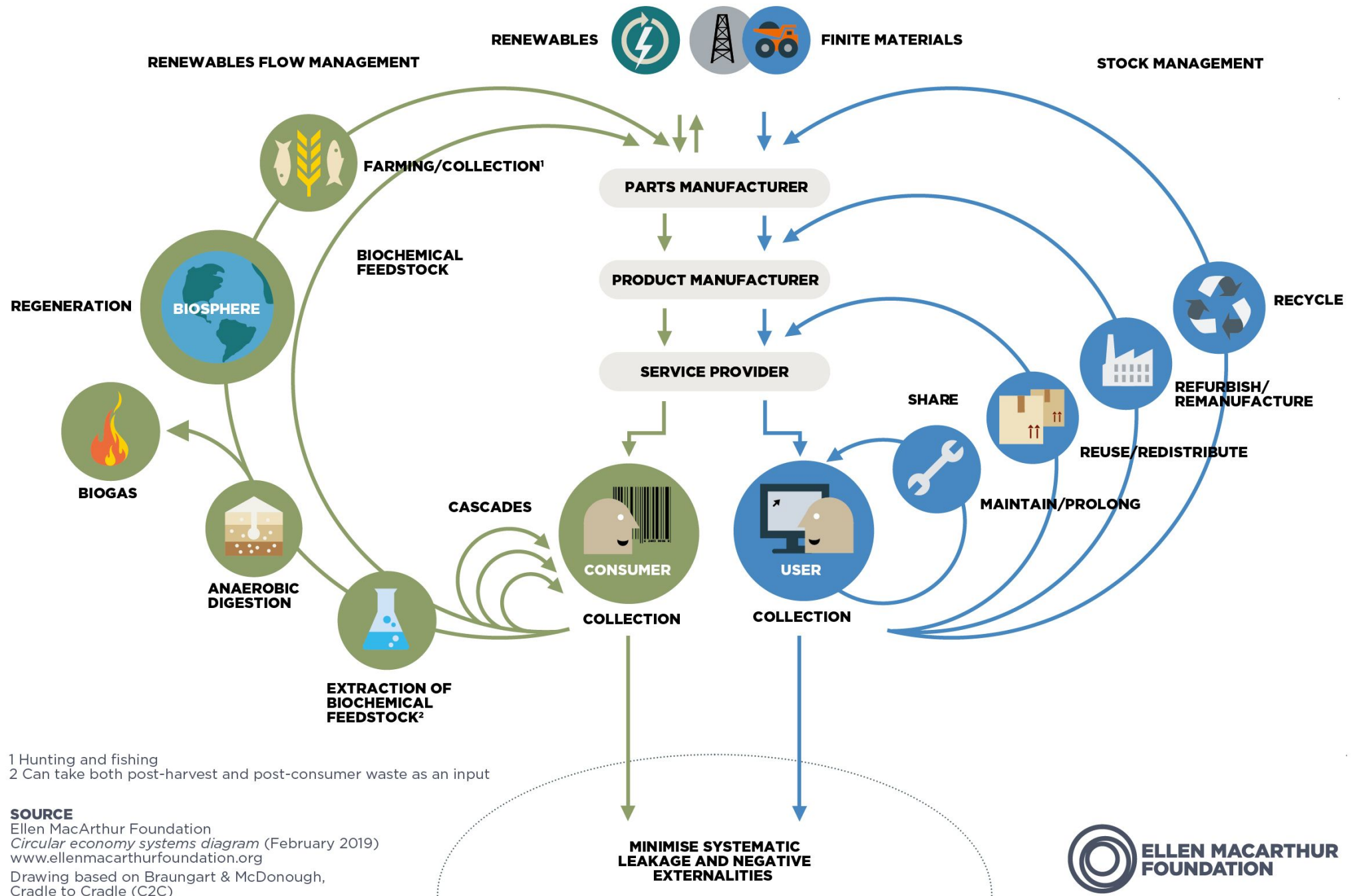
Project Manager for Learning and Design



# Circular Economy Principles

A circular economy is based on three principles, all driven by design:





1 Hunting and fishing  
 2 Can take both post-harvest and post-consumer waste as an input

**SOURCE**  
 Ellen MacArthur Foundation  
*Circular economy systems diagram* (February 2019)  
[www.ellenmacarthurfoundation.org](http://www.ellenmacarthurfoundation.org)  
 Drawing based on Braungart & McDonough,  
 Cradle to Cradle (C2C)



# Case Study Analysis

In breakout rooms of 5-6 people, read the case of your breakout room and discuss:

- Which of the three principles are reflected in this case?
- Which arm(s) and loop(s) of the Butterfly Diagram would you pin this case to?

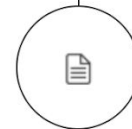
(7 minutes)

# Linear or Circular?



## EXAMPLE 1

Company X takes used plastic packaging and turns it into mudguards for their bicycles, street furniture such as benches or roads.

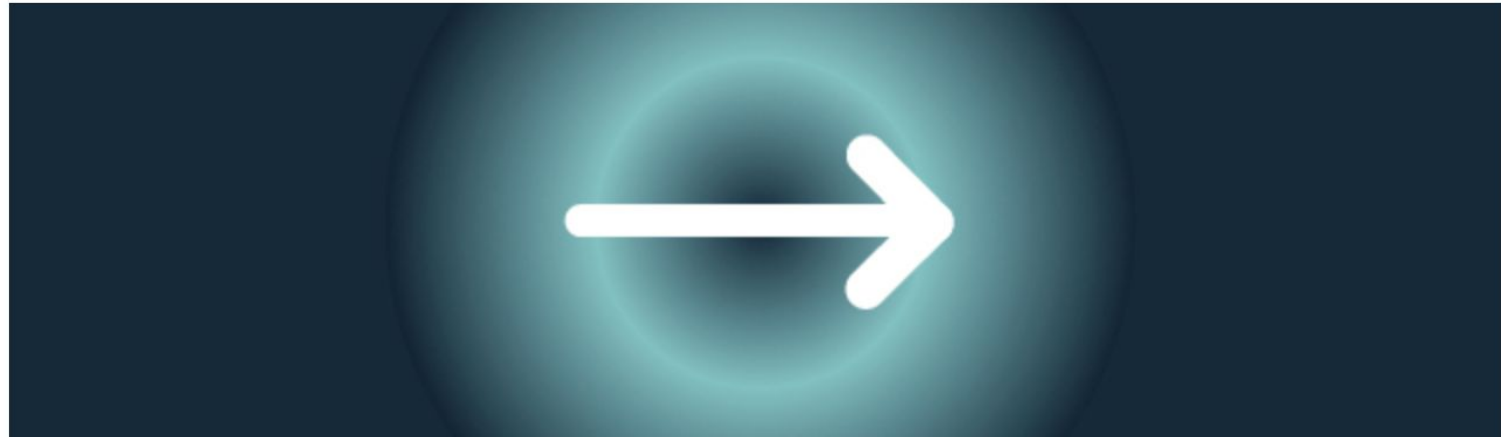


Linear



Circular

# Linear



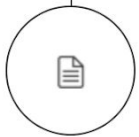
## **We agree.**

This is a predominantly linear application. Yes, the plastic is being used again but it's being downcycled into a mudguard or mixed with other materials to create a road, and, likely, it will eventually end up as difficult-to-manage and non-recyclable waste sooner or later.

# Linear or Circular?

## EXAMPLE 2

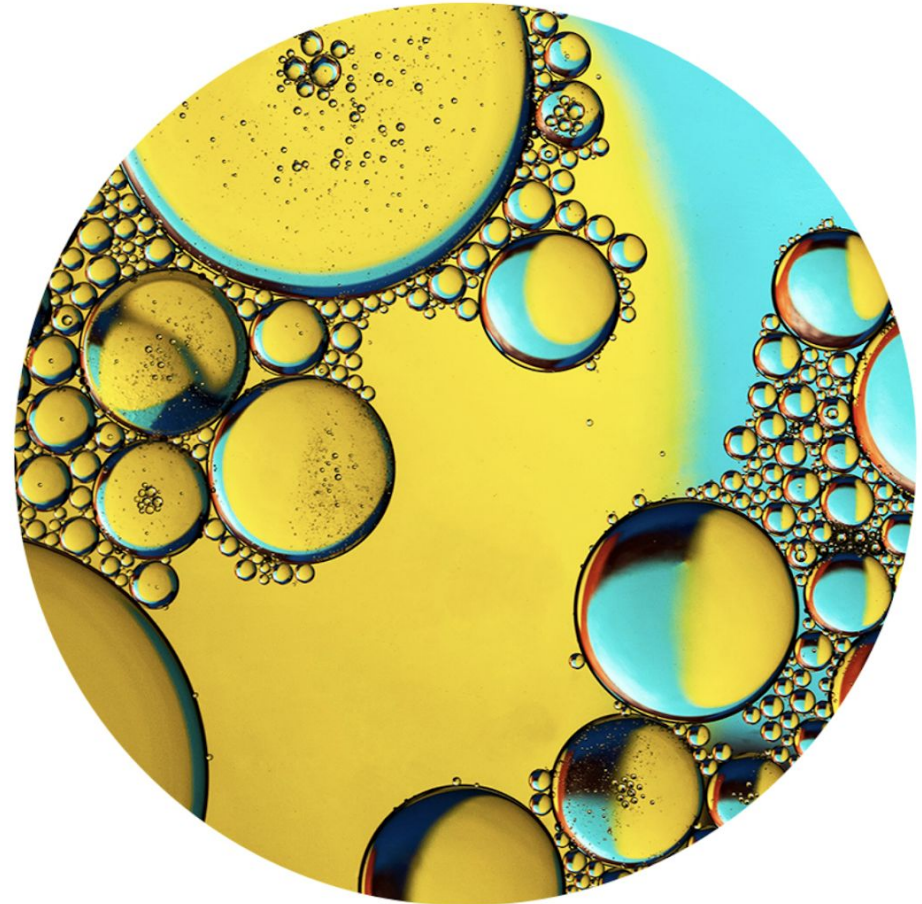
Company Y collects used plastic packaging and uses a new technology, called pyrolysis, to turn the plastic back into oil, which is sold as fuel to transportation companies.



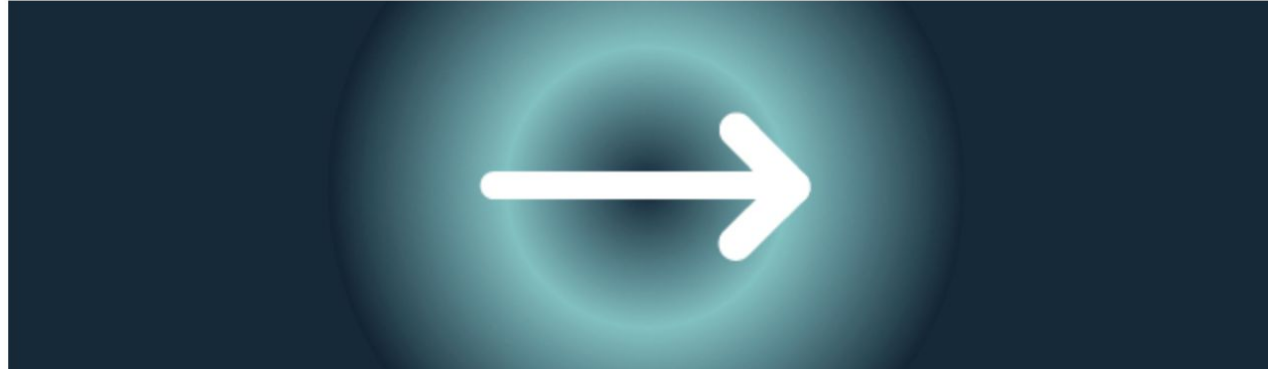
Linear



Circular



# Linear



## **We agree.**

Turning waste into fuel is not much different from burning waste to generate electricity. In both cases, while some one-time extra value is gained from the plastic, in the form of energy, the materials are then lost from the economy, which means new virgin materials are needed to produce the next generation of products.

In a circular economy, the circulation of materials aims to keep the materials in the economy at its highest value. The last resort is recycling, but this should result in turning used plastics into new materials. There are difficult-to-recycle plastic packaging items, which pyrolysis can process into a raw material that is turned into new plastics, instead of producing a fuel that gets burned.



# Linear or Circular?



## EXAMPLE 3

Company Z has a chain of shops that provide hot coffee to go. The company has decided to give its customers discounts when they bring a reusable cup with them, rather than using a single-use takeaway cup.



Linear



Circular

# Circular



## **We agree.**

While a takeaway cup is usually used only once before becoming waste, and can't be easily recycled because it is made from a mix of materials, the reusable cup can be used many times. By offering customers an incentive to carry reusable cups, Company Z is promoting 'reuse on the go'. Reusable packaging is a critical part of the solution to eliminate plastic pollution and create a circular economy for plastic.