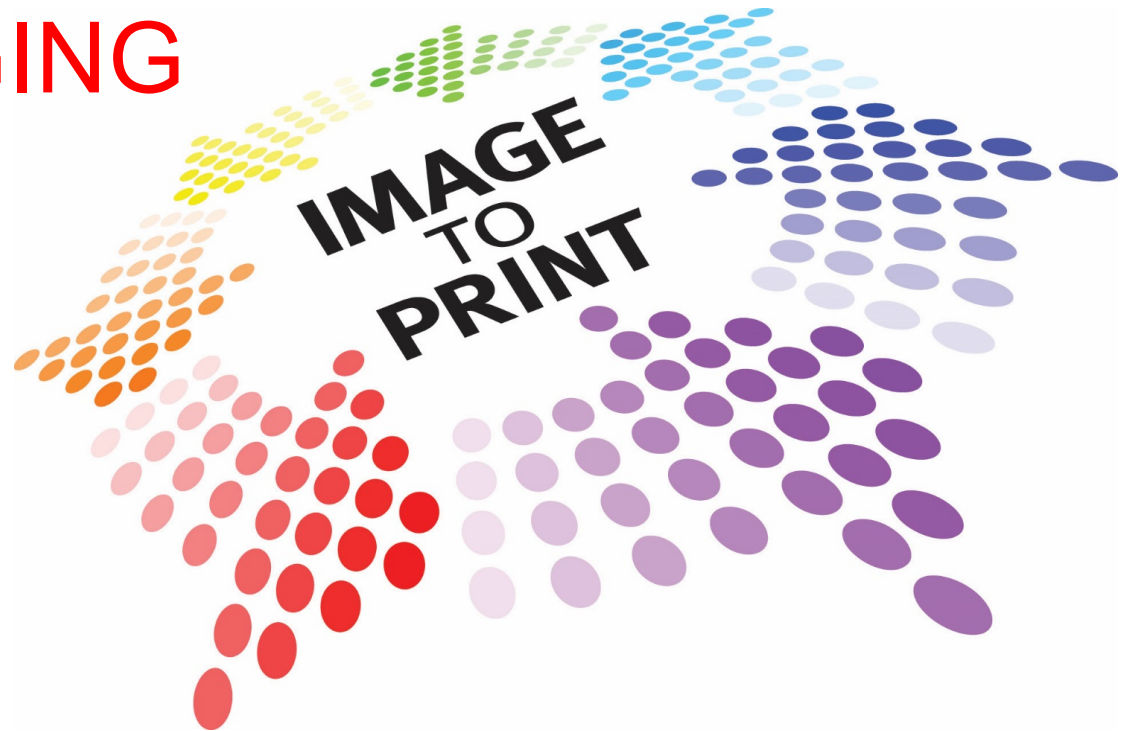


PRINTING TECHNOLOGY & INNOVATION DAYS FOR FLEXIBLE PACKAGING

20/21 November 2019
Kuala Lumpur, Malaysia



PRINTING TECHNOLOGY & INNOVATION
DAYS FOR FLEXIBLE PACKAGING

Circular Economy-
Challenge and Opportunity for
Flexible Packaging

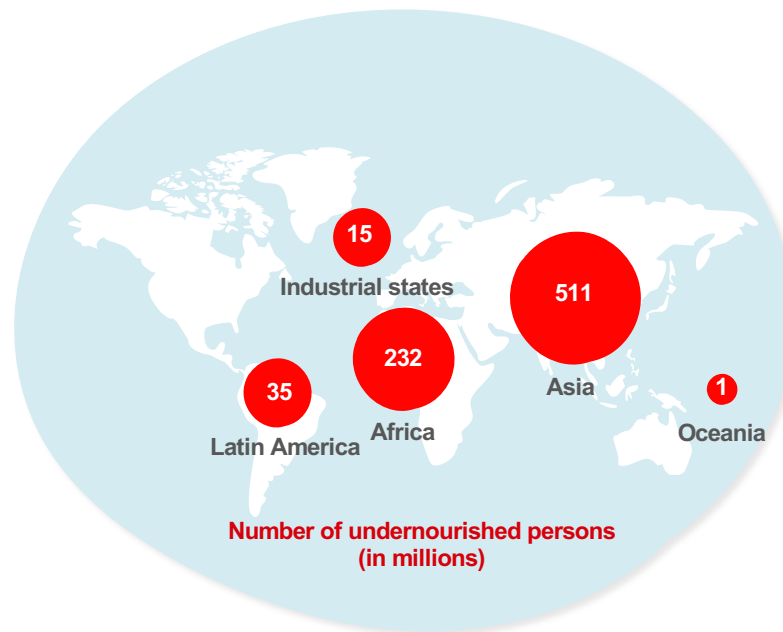
Thomas Haas
Head of Asia Support



Regions becoming impoverished – around 11% of the world's population is undernourished

- 800 million people live in extreme poverty and another 800 million live under the threat of poverty
- 3.1 million children die every year from malnutrition
- It is feared that natural catastrophes and climate change will further exacerbate the situation

Source: UN DP, WORLD BANK



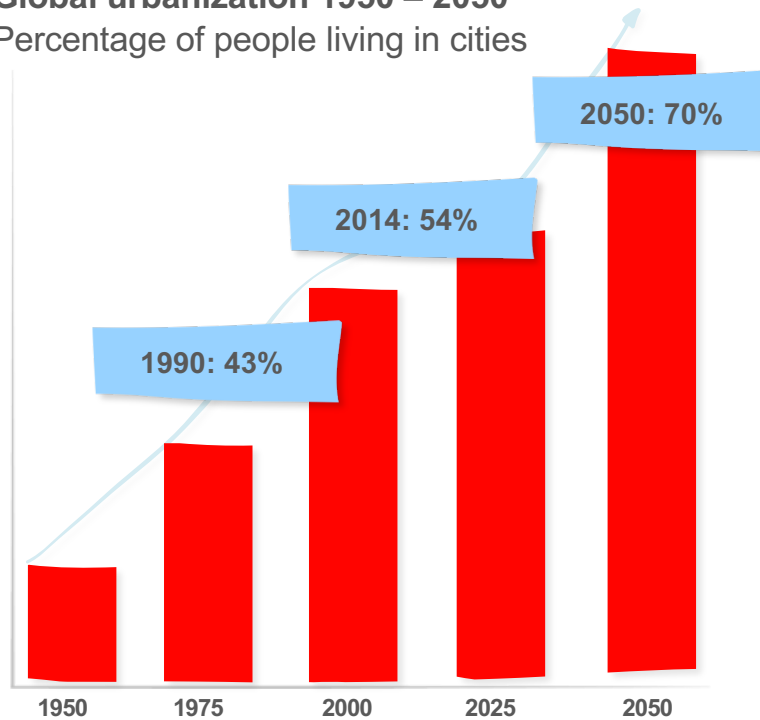
Urbanization – the trend towards mega-cities

- 180,000 people a day move into cities
- 22% of the world's population is distributed among only 600 cities
- An additional 2.5 billion people will be living in cities by the year 2050



Source: UN - World Urbanization Prospects, 2014

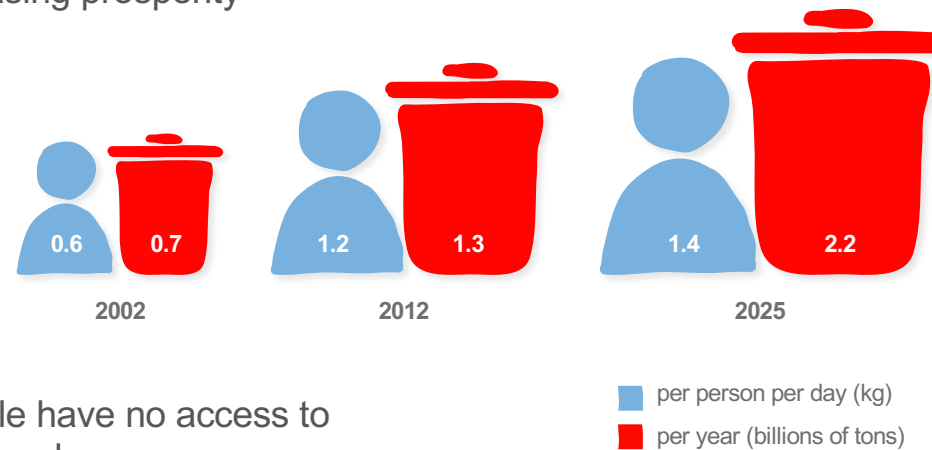
Global urbanization 1950 – 2050
Percentage of people living in cities



Lack of waste management!

Municipal waste; global

- There is an ever increasing amount of municipal waste due to a growing population and increasing prosperity
- The waste in cities with low incomes in Asia and Africa will have doubled in 15 - 20 years
- Around 3 billion people have no access to controlled waste disposal



Source: World Bank 2012



If we had no loss of food, there would be no hunger in the world

Loss of the total amount as a percentage







Shelf life time is limited, but can be lengthened

What must food be protected against to extend its shelf life?

- Microorganisms (mold and bacteria)
- Oxygen
- Moisture and steam
- Light
- Ethylene (ripening gasses in the case of fruit and vegetables)

Source: FPA

	Shelf life unpacked		Shelf life in flexible packaging
 Bananas	15 days	x 2.4	36 days Perforated PE bag
 Cucumber	3 days	x 6.6	20 days PE-shrink
 Meat	4 days	x 7.5	30 days Vacuum packaging
 Crisps	7 days	x 25	175 days Barrier bag



Nothing protects as efficiently as flexible packaging



How much of a product can you protect with a 1 kg package

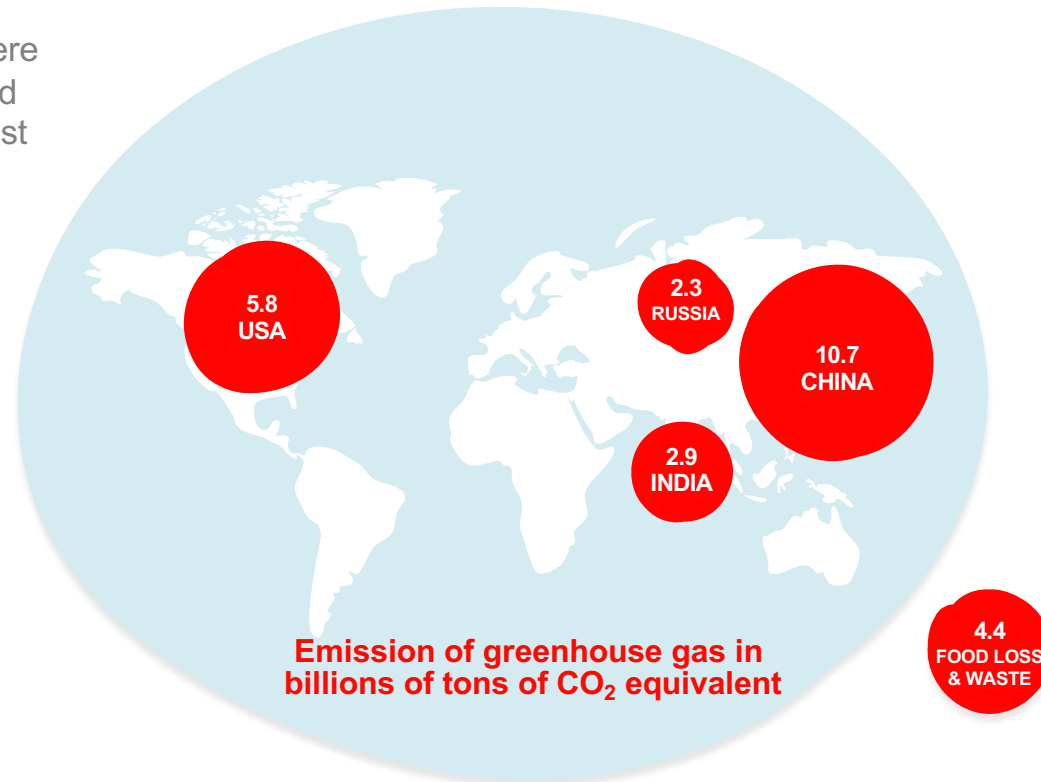


Source: Berndt+Partner



Flexible packaging protects the product and so in turn also the climate

If “Food Loss” were
a country, it would
be the third largest
originator of
greenhouse gas!



Source: FAO, 2015

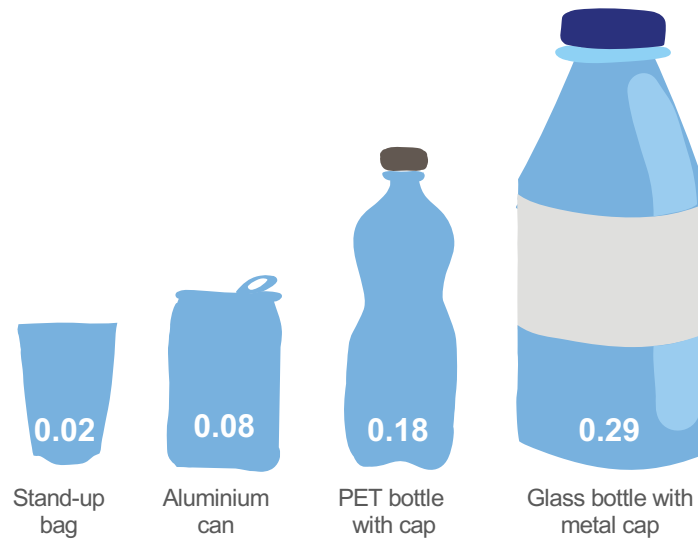


Flexible packaging has the best carbon footprint with equal performance

- The carbon footprint of flexible packaging is mostly superior to other systems
- Alternative packaging systems generate a 14.5-times higher CO₂ equivalence than flexible packaging

Source: FPA, Cradle to grave, in relation to an 8oz product

Emissions kg CO₂ equivalent for an 8 oz drink



Ocean Littering



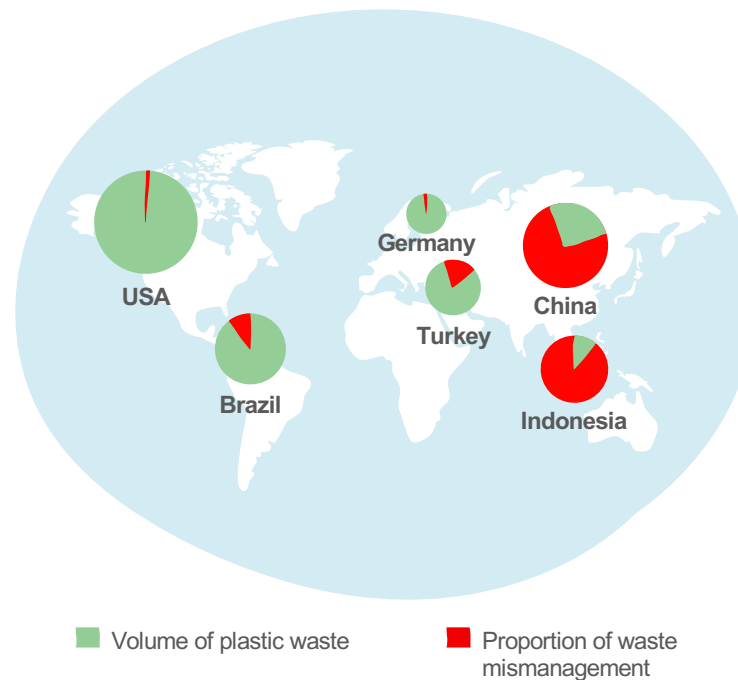
Waste mismanagement: Twice the amount of damage

- Economic damage due to loss of recyclable material
- Ecological damage due to littering of the environment
- Developing regions lose out twice through waste mismanagement



Source: GRID ARENDAL, 2015

Percentage of uncontrolled plastic waste



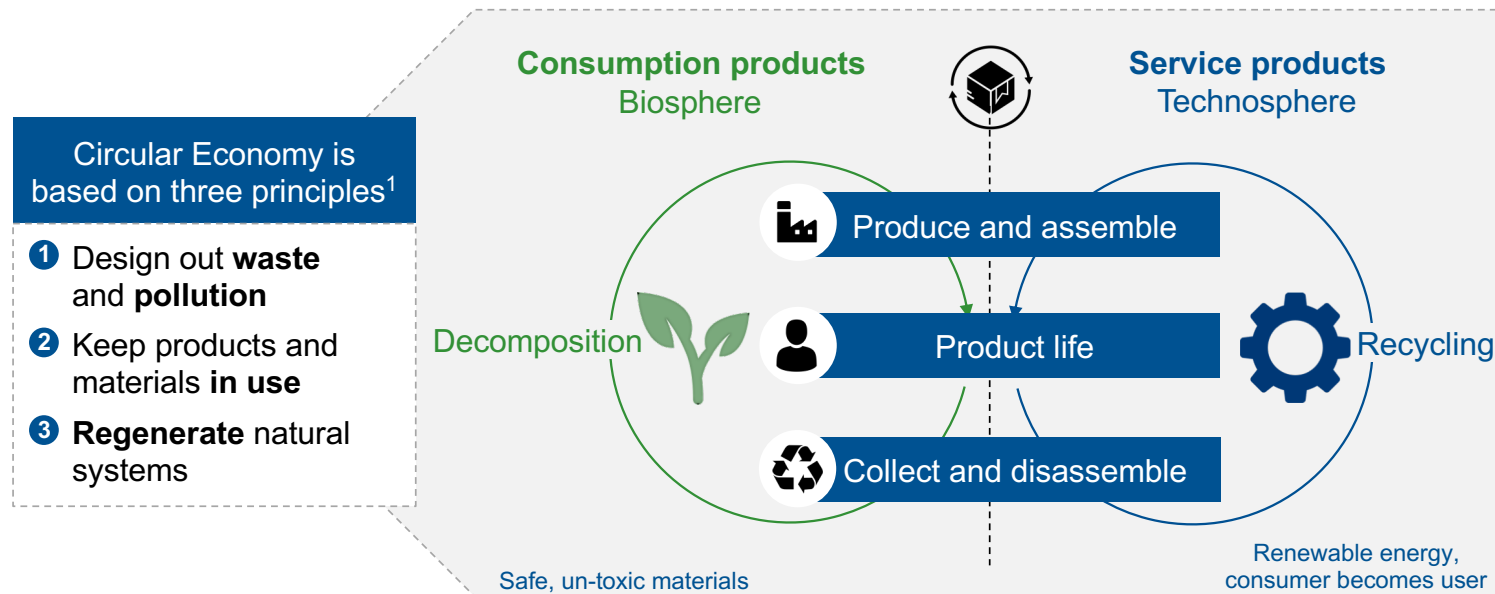
Ocean littering is the result of uncontrolled disposal



Circular Economy as solution to solve the plastic paradox



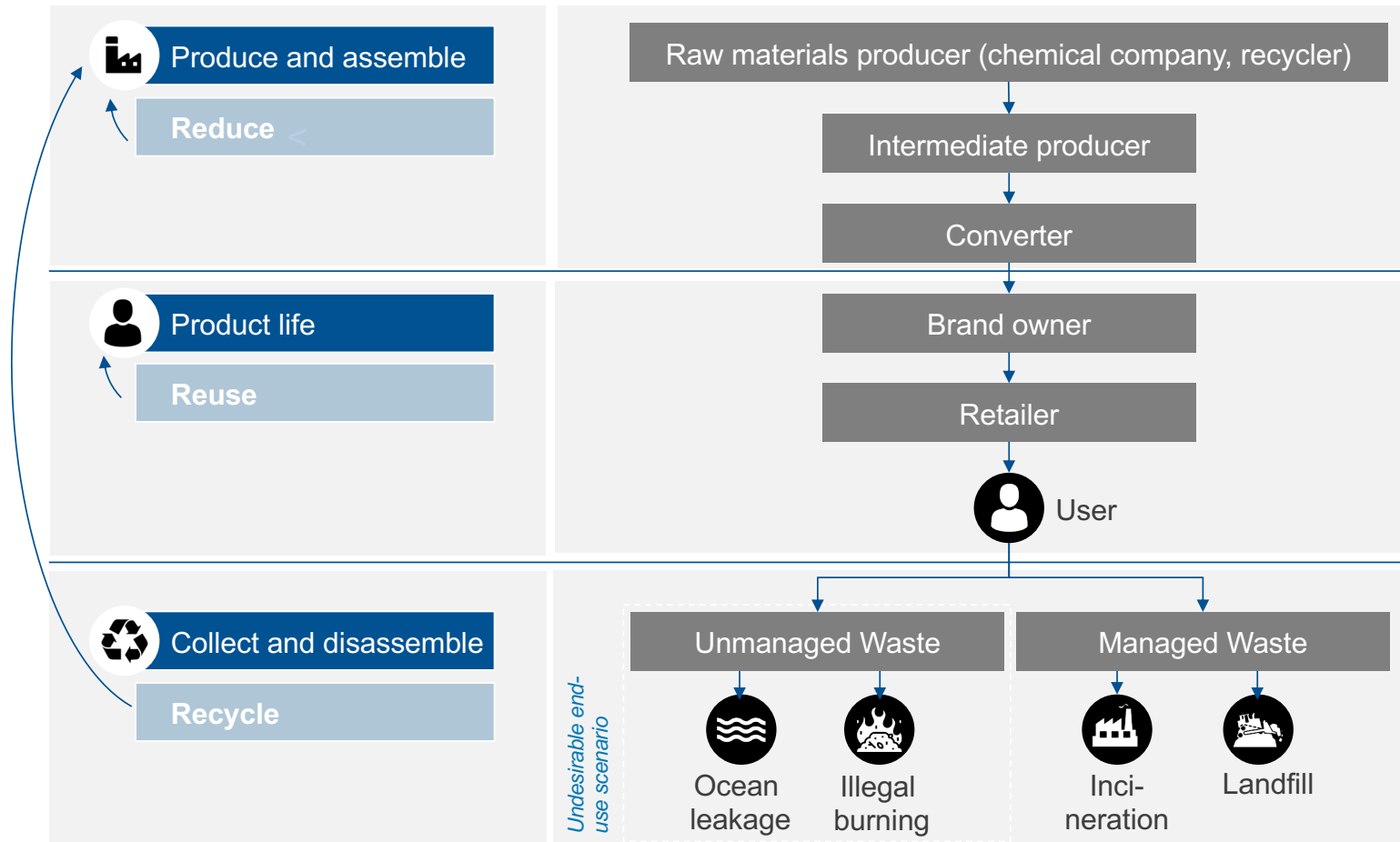
“A Circular Economy aims to redefine growth, focusing on positive society-wide benefits. It entails gradually decoupling economic activity from the consumption of finite resources and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital.” Ellen Mac Arthur Foundation



Source: Ellen MacArthur Foundation, Towards a Circular Economy, 2012



A circular plastic packaging value chain limits resources entering the system and maximizes their utilization



For a Circular Economy real transformation with Design for Less and Design for Recycling is needed



Design for Less (D4L)



- **Reduce** use of plastic
 - Eliminate **unnecessary packaging**
 - Eliminate plastic through **substituting with other materials**
 - Establish **re-use models**

Design for Recycling (D4R)



- **Optimize packaging structures** for each end-use scenario, especially mechanical recycling
- Design packaging to **retain highest possible value** in the recycling process

Printing inks and functional coatings are enabler for circular packaging solutions

Transformation drivers



Circular Economy: Initiatives to overcome plastics issue



Industry initiatives for circular economy

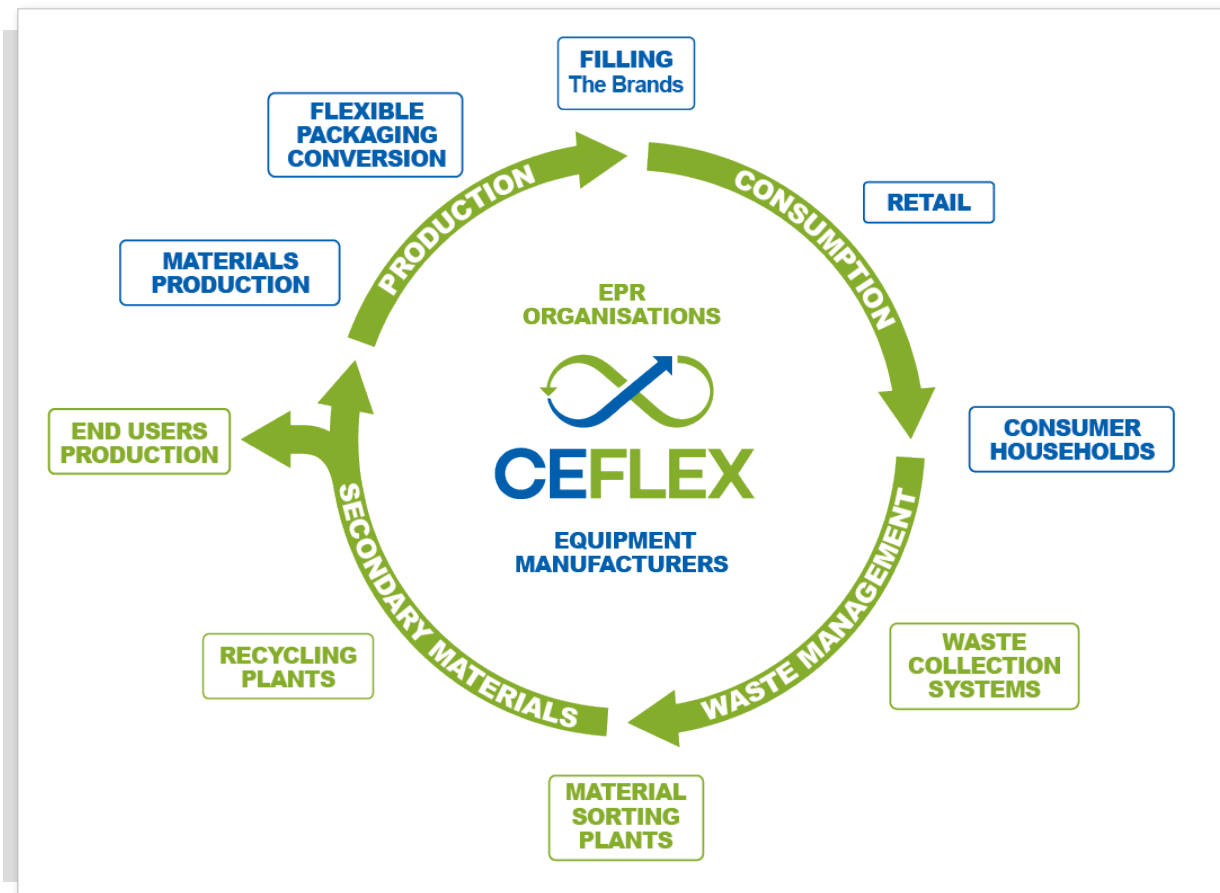
Many partners from plastic industry join activities to address challenges of circular economy

Initiative	Mission	Selected participants
 Ellen MacArthur Foundation	<p><i>"The Ellen MacArthur Foundation works with business, government and academia to build a framework for an economy that is restorative and regenerative by design"</i></p>	     
 CEFLEX	<p><i>"CEFLEX Mission is to further enhance the performance of flexible packaging in the circular economy by designing and advancing better system solutions."</i></p>	     
 cradleto cradle	<p><i>"Our task is to improve the quality and usefulness of materials, products and services to make a positive impact through eco-effective design."</i></p>	     <p>customers</p>
 Save Food	<p><i>"Our goal is to fight global food waste and loss. SAVE FOOD aims to drive innovations, promote interdisciplinary dialogue and spark off debates in order to generate solutions, across the entire value chain "from field to fork"."</i></p>	   

Source: Initiatives' communication; Siegwerk



CEFLEX: The Value Chain

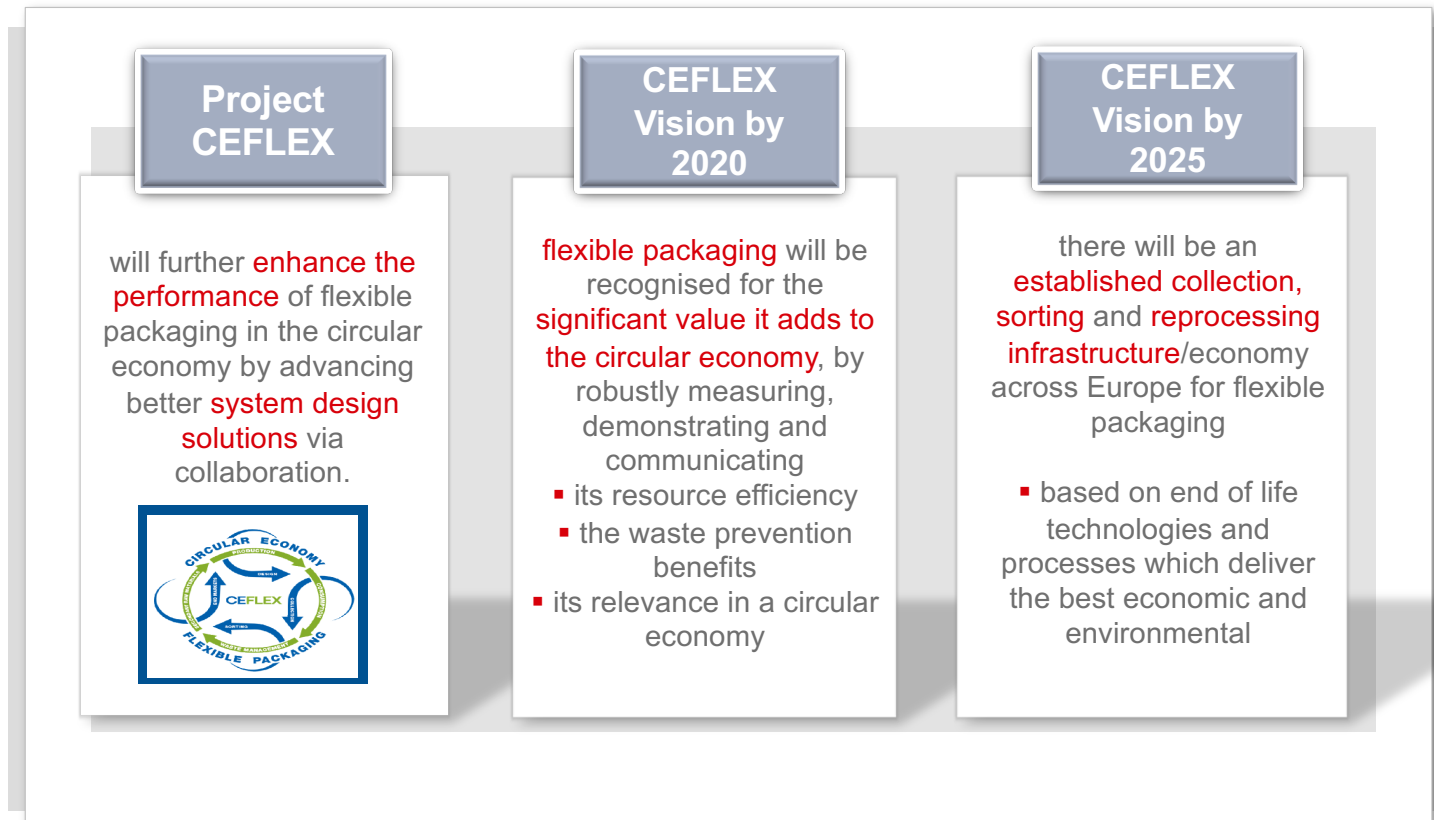


CEFLEX is a collaborative initiative of a European consortium of companies and associations representing the entire value chain of flexible packaging to enhance the Performance of flexible packaging in the circular economy.

Source: CEFLEX



CEFLEX Vision for the Circular Economy



Source : CEFLEX



Project Stakeholders of CEFLEX



Material Producers	Flexible Packaging Converters	Brand Owners and Retailers	Collectors, Sorters and Recyclers	Suppliers, End Users and Others
Keep Discovering smart adhesives DOW DuPont Teijin Films DUPONT Henkel INEOS Olefins & Polymers USA PlasticsEurope sappi SIEGWERK HYDRO infinite aluminum	THE ALLIANCE FOR BEVERAGE CARTONS AND THE ENVIRONMENT amcor Constantia ecolean Flexibles a lighter approach to packaging ffp FLEXIBLE PACKAGING EUROPE Huhtamaki IMMER Jindal Films mondi plastotecnica around your needs POLIFILM POLYPOUCH Sealed Air SAICA Re-imagine TORAY SCHUR FLEXIBLES Innovation by Chemistry SUDPACK WIPAC	Barilla The Italian Food Company Since 1877 HARIBO Hill's Transforming Lives JDE JACOBS DOUWE EGBERTS M&S EST. 1884 Nestle PEPSICO pladis GODIVA Ulker P&G Procter & Gamble ROYAL CANIN Unilever	APK newcycling attero energix met milie DerGrünePunkt ecoblue renewing resources mtm plastics die Aufwarter - the upcyclers SAICA PYRAL renewing resources suez TÖNSMEIER Kreuzen je bessere Umwelt	APPLIED MATERIALS make possible BOSCH Invented for life BRÜCKNER MASCHINENBAU CITEO Le nouveau nom d'Eco-Emballages et Ecofolio EREMAGROUP Expra Inspiring Packaging Recycling PELLENCST WE CAN SORT IT TOMRA SORTING SOLUTIONS RECYCLING WIDMANN & HÖLCHER

Source : CEFLEX (status Sep 2018)



“Brand Owner and Converter react : Sustainability Commitments”



Amcor, Zurich, has announced its pledge to develop **all its packaging to be recyclable or reusable by 2025**. At the same time, the company committed to significantly increasing its use of recycled materials and driving consistently more recycling of packaging around the world.



Nestlé announced its ambition to make **100% of its packaging recyclable or re-usable by 2025**. Its vision is that none of its **packaging, including plastics**, ends up in landfill or as litter. ... Our ambition is to achieve 100% **recyclable** or reusable **packaging** by 2025.



Unilever committed to ensuring that **all of its plastic packaging** is fully **reusable, recyclable or compostable by 2025** as it called on the entire fast-moving consumer goods industry to accelerate progress towards the circular economy



By **2025, 100% of McDonald's guest packaging** will come from **renewable, recycled or certified sources**. By **2025**, McDonald's goal is to **recycle guest packaging in 100%** of McDonald's restaurants. We understand that recycling infrastructure, regulations and consumer behavior vary from city to city and country to country, but we plan to be part of the solution and help influence powerful change.









Nestlé gives clear direction for change



The Negative List

We have identified several materials for which recycling schemes are unlikely to be established. These materials will no longer be used in new product packaging and we will also immediately begin phasing them out from existing packaging.

Material	Application examples
 Polyvinyl Chloride (PVC)	sleeves, labels, films, trays, printing inks, sealing layers
 Polyvinyliden Chloride (PVDC)	PVDC coated bi-oriented Polypropylene (PP) films
 Polystyrene (PS)	trays, yoghurt pots, lids for ice cream cones and coffee cups
 Expanded Polystyrene (ePS)	trays, pots, tubs, transport protections and sleeves
 Regenerated Cellulose	twist wraps, pack windows
 Non-recyclable plastics/paper combinations	paper/plastic laminates, laminated paper cups

January 17, 2019



It's about us: The Packaging Industry

Opportunities for Packaging

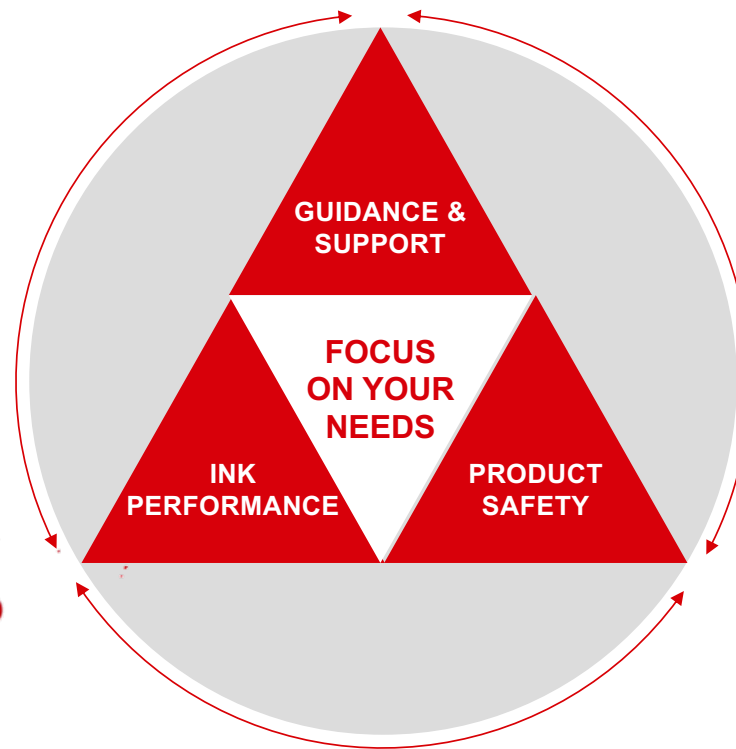
- Packaging is of high value for FMCG and the safe and efficient distribution of food in the world
- Circular Solutions require collaborative networks along the value chain
- Design for Less Plastic (D4L):
 - Usage of paper for selected applications
 - New re-use / re-fill concepts
- Design for Recycling (D4R) :
 - Substitution of multi-materials by mono-materials
 - Phase out of non recyclable or disturbing materials
 - Improved sorting technologies
 - Improved cleaning of plastic waste (e.g. de-inking)



We guide you to efficient & safe performance



INK, HEART & SOUL



THANK YOU FOR YOUR ATTENTION.

janoschka

