CHAPTER 3. PACKAGING

Woman picking juice drinks - FMCG companies use packaging to protect the underlying products but also for branding and customer communication

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1. INTRODUCTION AND SUMMARY

FMCG companies use extensive amounts of packaging. It plays an important role in protecting products and minimizing damage and waste. It is also vital for companies' branding.

It does, however, create multiple environmental problems. The extraction of raw materials often contributes to issues such as deforestation and fossil fuel depletion; and packaging production processes can cause emissions to land, water and air. Packaging is also one of the most common items to be mismanaged at the end of its life, adding to problems like ocean waste.

For FMCG companies, poor management of the problems around packaging creates potential reputational and longer-term regulatory risks, as well as supply chain resilience issues.

For companies that want to stay ahead of consumer expectations and regulatory change, as well as improve their reputation and operational resilience, the answer is sustainable packaging. There are various benefits to sustainable packaging, with Asian FMCG companies increasingly adopting sustainable practices.

However, defining 'sustainable packaging' is not simple. For example, one type of packaging can increase product shelf-life thereby reducing waste, but may have a higher resource requirement or end of life footprint. This is precisely why companies need to use systems thinking and do a proper assessment of all trade-offs when deciding what packaging to use. There is guidance available on this.

This chapter:

- Reviews existing focus on packaging by the finance sector;
- Sets out the major environmental impacts of unsustainable packaging and poor management of packaging waste;
- Identifies steps toward more sustainable packaging;
- Highlights the business benefits of more sustainable packaging;
- Presents solutions and existing market practices to overcome potential hurdles.

The following table identifies, based on public disclosure, which of the 26 large Asian FMCG companies have already taken steps to address environmental and social issues

in their packaging solutions. Note that none of them have disclosed the adoption of a systems approach and the steps below taken alone are not solutions to sustainable packaging. They should be perceived as sub-strategies/actions that can form part of a sustainable packaging optimization strategy based on a systems approach. Without systems thinking in the first place, each of these steps taken on a standalone basis could lead to sub-optimal outcomes from a sustainability (or economic) point of view.

Financiers should assess the companies to understand how much they have progressed from point zero of not doing anything toward systems thinking, bearing in mind that the net outcome of a poorly thought out strategy of taking some steps without systems thinking could have a net negative impact.

Figure 23: Companies' disclosure of their steps to address packaging issues

	Assessment of packaging design to protect products	RESPONSIBLE SOURCING OF MATERIALS		Material/design optimization	Consideration of end of life in material choices and support of recycling infrastructure
		Sourcing of certified responsible paper-based materials	Use of recycled materials		
Amorepacific Corp			YES	YES	YES
Charoen Pokphand Foods PCL				YES	
China Mengniu Dairy Co Ltd		YES	YES		YES
Dutch Lady Milk Industries Bhd		YES			
Emami Ltd					
Fraser & Neave Holdings Bhd			YES	YES	
Fraser & Neave Ltd			YES	YES	
Godrej Consumer Products Ltd					
Hindustan Unilever Ltd		YES	YES	YES	YES
Indofood CBP Sukses Makmur Tbk PT			YES	YES	YES
Masan Consumer Corp					
Mayora Indah Tbk PT					
Nestlé Malaysia Bhd	YES	YES	YES	YES	YES

	Assessment of packaging design to protect products	RESPONSIBLE SOURCING OF MATERIALS		Material/design optimization	Consideration of end of life in material choices and support of recycling infrastructure
		Sourcing of certified responsible paper-based materials	Use of recycled materials		
Orion Corp/Republic of Korea					
Petra Foods Ltd					
San Miguel Corp			YES		
Super Group Ltd / Singapore					
Thai Beverage PCL			YES	YES	
Thai Union Frozen Products PCL			YES	YES	
Tingyi Cayman Islands Holding Corp					
Tsingtao Brewery Co Ltd					
Ultrajaya Milk Industry & Trading Co Tbk PT					
Unilever Indonesia Tbk PT		YES	YES	YES	YES
Universal Robina Corp					
Vietnam Dairy Products Joint Stock Company					
Want Want China Holdings Ltd		YES			

SUSTAINABLE PACKAGING: THE BUSINESS BENEFITS

Saving money

Sustainable packaging has the potential to create many savings, from immediate cost savings from lower use of raw materials (packaging makes up roughly 8 per cent of the cost of food products and up to 40 per cent of the cost of manufacturing cosmetics[265]) and efficiencies within packaging operations, to reduced distribution costs because packaging is lighter. It can also create efficiencies with retailers where handling costs are lower and with the end user where packaging increases shelf-life or product utility. This is of course subject to no loss in the performance in its primary role to prevent product damage and waste.

WHEN THE MISMANAGEMENT OF PACKAGING WASTE CONTRIBUTES TO POLLUTION PROBLEMS, IT CAN BE VISIBLY LINKED BACK TO THE COMPANY

Enhancing branding and reducing reputational risk

There are reputational issues related to packaging, particularly around waste and sourcing. When the mismanagement of packaging waste contributes to pollution problems, it can be visibly linked back to the company. Brands can enhance their green credentials through their packaging.

Increasing operational resilience

Packaging materials supply disruption can be a business risk for FMCG companies. Where packaging materials are derived from soft commodities, notably paper and paperboard, responsible sourcing can mitigate some of the related risks. Similarly, companies sourcing packaging materials derived from petroleum and aluminium face greater price volatility and supply disruption risk.

Minimizing regulatory risk

Paper is a significant packaging raw material for FMCG products but may also be linked to illegal timber harvesting, putting FMCG companies at risk of regulatory impacts as more and more countries adopt regulations to face this issue. An increasing number of countries are also tackling plastic waste by introducing binding targets for recycling that may affect FMCG companies – both by increasing their costs and influencing consumers' behaviour toward purchasing products with recyclable packaging.

SUSTAINABLE PACKAGING STRATEGIES

Although there is no common definition of sustainable packaging, there are initiatives to create standards and protocols, such as the Global Packaging Protocol, and opportunities to work with other FMCG companies on shared solutions. The use of systems thinking should underlie any strategy to achieve more sustainable packaging.

Companies can use the steps and questions below to help formulate their strategy.

Internal capacity building, monitoring and reporting on progress

Companies adopting a strategy to achieve more sustainable packaging need first to build internal capacity, undertake analysis and then set appropriate goals.

- Does the company take a systems view in order to assess its overall environmental impact and identify opportunities for improvement?

- Is there internal capacity to understand the environmental and social footprint of current packaging solutions, including expertise on packaging and systems thinking? Is the company able to gather information of sufficient quantity and quality on its packaging footprint?

A conveyor line carrying thousands of aluminum beverage cans at a factory

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- Are decision-makers within the company incentivized based on systems-level results or are departments working in silos and hindering the company's efforts to take a systems approach?

- How does the company measure the sustainability of its packaging and what tools does it use to assess its packaging?

- Has the company developed a sustainable packaging policy based on target key performance indicators that are quantified and time-bound?

- Has the company set out an internal governance structure with clear responsibilities to review and monitor the sustainable packaging policy?

- Does the company report its progress to its stakeholders?

Design the packaging to protect products

The focus here is to ensure that systems thinking is in place and to respect that the fundamental purpose of packaging is to protect and facilitate use of the product. Resources can be saved via suitable packaging design if there is a resulting extension in the shelf-life of the product and/or reduction in damage, misuse and mishandling both at the distribution and consumer use ends.

- Has the company assessed the performance of its packaging solutions in terms of shelf-life, and rate of damage during transportation at the distributor end and consumer end?

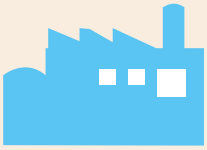
- Does the company monitor misuse or product wastage (for example, spillage, spoilage or leftover product inside the packaging that cannot easily be retrieved) at the consumer end?

- Does the company compare the relative performance of packaging materials (in terms of product shelf-life etc.) in its design and material choice? (See sub-strategy below on material/design choice.)

Use responsibly sourced and/or recycled materials

Here the focus is on the sourcing of the raw materials for the packaging. For example, using FSC-certified paper and paperboard and using recycled materials. This is important for FMCG companies where marketing to 'ethical' consumers and where FMCG companies have already started sourcing responsibly produced and recycled raw materials.

- What proportion of packaging materials are responsibly sourced or recycled? Is this formalized through procurement policies and are there plans to increase the proportion of responsibly sourced materials?



IT IS KEY THAT SYSTEMS THINKING IS USED TO UNDERSTAND ALL OF THE TRADE-OFFS WITHIN THE PRODUCT AND PACKAGE SUPPLY CHAIN IN MAKING DECISIONS AROUND OPTIMIZATION OF MATERIAL USE

- Are the raw materials credibly tracked via certifications with chain of custody or third party verification?

- How would the brand value of the company or product be impacted by increased consumer awareness of the extent of sustainability of the packaging raw materials? Can more sustainable packaging provide branding and new market opportunities?

Optimize material/design

FMCG companies need to consider how to optimize their use of materials. First and foremost, the role of a package is to protect the contents inside. Packaging material use in either extreme (increased or decreased materials) can contribute to additional environmental impacts. It is key that systems thinking is used to understand all of the trade-offs within the product and package supply chain in making decisions around optimization of material use.

There can be benefits to using less materials where this does not compromise packaging performance. Less materials can reduce input costs as well as waste. It can also lower the weight and/or volume of packaging and hence reduces distribution and handling costs. However, taken in isolation, there could be overall negative impacts. For example some extremely lightweight materials are too thin to go through existing recycling lines.

- Are there opportunities to lower material input and potentially distribution costs through changing the mix of the material or packaging design?

- Is there an opportunity to collaborate with a packaging supplier to share research and development costs and develop packaging with less materials for the same functions and with the same end of life impacts, or at least an overall net positive impact on the value chain?

Consider end of life in material choices and work with partners to enhance recovery and recycling systems

The emphasis of this strategy is on designing packaging and choosing materials that have a lower footprint and specifically have a lower contribution to waste, taking into consideration the local waste management options and waste hierarchy. Beyond material choice, there is also the question of how companies work with regulators and consumers to create better waste management systems, including recycling infrastructure.

- Has the material and design choice taken into consideration the existing recycling technology, infrastructure and practices in place in the consuming country (for example, some extremely lightweight materials are too thin to go through existing recycling machines)?

- What proportion of packaging materials can be reused or recycled?

- What proportion of customers have access to recycling infrastructure?
- Would different choices of materials or designs improve the reuse/recycling rates and what are the trade-offs to consider, for example, the quantity and renewability of materials that are more easily recyclable?
- Is it possible to work with other parties to improve recovery and recycling infrastructure?

ENGAGEMENT QUESTIONS FOR INVESTORS

- Does the company perceive and understand sustainability risks or opportunities relating to packaging?
- Has the company taken a systems approach in trying to optimize its packaging?
- What are the barriers the company faces to developing and implementing sustainable packaging solutions?
- How does the company decide what to disclose about its approach?

WHAT IS 'SUSTAINABLE PACKAGING'?

Packaging performs four key functions – (i) containment of the product for transport and use, (ii) protection of the product, (iii) communication about the contents as well as branding, and (iv) utility to consumers through making products last longer and enabling reclosure. In light of these functions, it is not always clear how FMCG companies should make relevant trade-offs, such as between changes in packaging utility and changes in resource footprint.

For example, one type of packaging can increase product shelf-life, so reducing waste. But it may have a higher resource requirement or end of life footprint. Given the majority of the environmental footprint of a packaged food product lies in the product itself, if packaging can be optimized to increase shelf-life and reduce waste, the overall system becomes much more sustainable. This is precisely why systems thinking is required and a proper assessment reflecting all trade-offs is needed.

Even questions such as resource footprint require complex calculation and thinking about the whole system. For instance, a company may be choosing between plastic or glass bottles on sustainability grounds. It is only possible to assess this with an understanding of the waste disposal procedures and consumer behaviour in the relevant market's area. Will consumers reuse or recycle the bottles? Are there facilities to recycle glass or plastic? Should biodegradeable plastic be used or is there a risk this will contaminate plastic for recycling? Should lower weight, new technology materials be used or is there a higher end of life footprint if they are more difficult to recycle? As such, there are also local differences to consider – what may be a sustainable solution for one product or one market might not be more sustainable for another.

2. EXISTING FOCUS ON SUSTAINABLE PACKAGING BY THE FINANCIAL SECTOR

COLLABORATIVE INITIATIVES

As You Sow

As You Sow[266] is a US-based non-profit organization that promotes environmental and social corporate responsibility through shareholder advocacy and collaborative actions. As You Sow has been particularly active on the issue of consumer packaging since 2013, working alone or with investors to propose shareholder resolutions on the issue at annual general meetings of FMCG companies and retailers.

The Closed Loop Fund

The Closed Loop Fund[267] is an initiative in the US supported by FMCG companies such as Coca-Cola Co, PepsiCo Inc, Unilever NV, Procter & Gamble Co, Johnson & Johnson and other US corporations including Wal-Mart Stores Inc and Goldman Sachs Group Inc. They have invested millions of dollars in a social impact fund charged with increasing the recycling and recovery rate in the US. The fund will achieve this goal by providing zero interest loans to communities to develop recycling infrastructure. The fund links the financial interest of companies that need recycled material back in their supply chain (to reduce cost) to the capital that municipalities need to invest in recycling infrastructure.

The Plastic Disclosure Project

The Plastic Disclosure Project[268] asks companies to measure, manage, reduce and benefit from plastic waste in order to create a world in which plastic adds value for consumers and businesses without negatively impacting the environment. Its current supporters include Credit Suisse, the Sustainable Investment Research Institute Australia, the Responsible Investment Research Association – India, Environmental Investment Services Asia Limited and the United Nations Environment Programme (UNEP).

SIGNIFICANT ACTIONS BY INDIVIDUAL INVESTORS ON PACKAGING ISSUES

Shareholder resolutions proposed in the US by As You Sow[269] have yielded strong support from shareholders, as shown opposite. While these are clear examples of how pressure from financial institutions can drive change, it is important that the change is well thought out and takes into consideration all of the trade-offs in a system. WWF notes that some of the resolutions opposite are based on a single criteria and not on systems thinking.

- In 2015, 29.1 per cent of **Kraft Foods Group Inc's** shareholders voted in favour of the resolution: "Be it resolved: Shareowners of Kraft Foods Group request that the Board of Directors issue a report at reasonable cost, omitting confidential information, by 1 October 2015 assessing the environmental impacts of continuing to use non-recyclable brand packaging." As of 7 December 2015 the Group's website described highlights of its activities and progress on packaging[270] but no report or information about environmental impacts of non-recyclable packaging was found in the Group's public information.

- In 2015, 31.1 per cent of **Dr. Pepper Snapple Group Inc's** shareholders supported the resolution: "Be it resolved: Shareowners of Dr. Pepper Snapple Group request that the Board of Directors adopt a comprehensive recycling strategy for beverage containers sold by the company and prepare a report by 1 September 2015 on the company's efforts to implement the strategy. The strategy should include aggressive quantitative recycled content goals, and container recovery goals for plastic, glass and metal containers. The report, to be prepared at reasonable cost, may omit confidential information." The same resolution was voted by 30 per cent of the company's shareholders in 2014. As of 7 December 2015 the Group's website mentioned an initiative with NGO Keep America Beautiful to increase recycling in parks in the US[271] but no information or report about a comprehensive recycling strategy or report was found in the Group's public information.

- In 2015, 31.7 per cent of **Kroger Co's** shareholders voted in favour of the resolution: "Be it resolved: Shareowners of Kroger request that the Board of Directors issue a report, at reasonable cost, omitting confidential information, assessing the environmental impacts of continuing to use unrecyclable brand packaging." A similar shareholder resolution proposed by As You Sow in 2014 asking Kroger to develop a policy position on recycling had only obtained 13 per cent of shareholder support.

- In 2015, 27.9 per cent of **Mondelēz International Inc's** shareowners supported the resolution: "Be it resolved: Shareowners of Mondelēz International request the Board to issue a report, at reasonable cost, omitting confidential information, by 1 October 2015, assessing the environmental impacts of continuing to use non-recyclable brand packaging." As of 7 December 2015 the company had a stated goal on its website to eliminate 50 million pounds (22,500 tonnes) of packaging material by 2015[272] but no information or report was found on the specific topic of environmental impacts of non-recyclable packaging.

- On 13 October 2014 **Procter & Gamble Co** announced new sustainability goals including a commitment that 90 per cent of its packaging will be recyclable by 2020. This came the day before the vote of a shareholder resolution filed by As You Sow asking the company to stop using unrecyclable packaging. The resolution won the support of 25 per cent of the company's shareholders, representing more than US$35 billion of shares.[273]

A selection of plastic-wrapped pasta on the shelves in a supermarket in Bangkok

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3. THE ENVIRONMENTAL IMPACTS OF 'UNSUSTAINABLE' PACKAGING AND POOR MANAGEMENT OF PACKAGING WASTE

Packaging can significantly contribute to preserving resources by protecting the product it contains and minimizing damage and waste. Given the majority of the environmental footprint of a packaged food product lies in the product itself, if packaging is not optimized to increase shelf-life and results in high wastage, the overall system is highly unsustainable, and the environmental footprint of the product is significantly increased. For example, the East Asia-Pacific region has the highest percentage of organic waste in the world (62 per cent of the total waste). Here, there is a big sustainability opportunity to cut food waste by using more effective packaging.[274]

Packaging is also associated with multiple environmental problems – extraction of raw materials often contributes to environmental impacts like deforestation and fossil fuel depletion, and packaging production processes contribute to emissions to land, water and air.

In addition, packaging is one of the most common items to be mismanaged at end of life and contributes to problems like ocean waste. According to the US EPA,[275] packaging and containers accounted for the largest portion of municipal waste generated in the US in 2013: 29.8 per cent, or over 75 million tonnes. Half of this packaging waste (38.56 million tonnes) was paper and paperboard, 13.98 million tonnes were plastics, 9.46 million tonnes were wood and 9.26 million tonnes were glass. Almost half (48.5 per cent) of this waste was not recovered and ended up in landfill.

Approximately 85 per cent of plastic waste (not limited to plastic packaging waste) around the world is not recycled.[276] Even Europe, whose paper industry leads the world in recycling with an average paper recycling rate (not limited to paper packaging waste) of 71.7 per cent in 2013,[277] only had a recycling rate of 34.7 per cent for its plastic packaging waste in 2012.[278] While some packaging waste comes from other consumer products, FMCG products are still a key component.

The estimated value of discarded packaging in the US is US$11.4 billion annually and unrecovered plastic packaging sent to landfill is worth over US$8 billion in the US alone.[279]

Figures for Asia are rare but the principle still applies. China Water Risk[280] estimates that packaging waste accounts for over 30 to 40 per cent of China's total municipal waste in terms of volume and much of this is not recycled. In 2013, 44.75 per cent of paper and paperboard waste was recycled in China while the rate was even lower at 23 per cent for general plastic waste.

FMCG companies that are not reducing and reusing materials, not educating their consumers about recycling and not working with other stakeholders to boost recycling infrastructure will end up bearing higher packaging costs in the long run.

This is precisely why systems thinking is required to optimize packaging so it becomes more sustainable. A proper assessment reflecting all trade-offs along the entire value chain is needed.

4. MOVING TOWARD MORE SUSTAINABLE PACKAGING

WHAT IS ALREADY HAPPENING?

There is no common definition or one universal attribute of 'sustainable packaging'. However, some initiatives are addressing this through a broad philosophy that sustainable packaging should incur the minimal environmental impacts possible while meeting the needs of the product and the distribution system and bearing in mind the existing waste management infrastructure.

The Global Packaging Protocol[281] is an initiative from the CGF, which the consumer goods industry can use to assess the relative sustainability of packaging. It provides a common language and set of indicators companies can use to reduce the environmental impact of their packaging.

Other initiatives include the Sustainable Packaging Coalition (SPC)[282] which is founded on a science-based approach, supply chain collaborations and continued outreach. The SPC has almost 200 member organizations including large FMCG companies such as Coca-Cola Co, PepsiCo Inc, Unilever NV and Kellogg Co.

While few companies disclose the adoption of a systems-based approach in their packaging strategy, there are some other more common sub-strategies that companies adopt. These include:

- Designing packaging to minimize waste and damage;
- Using responsibly sourced materials (for example, FSC-certified virgin paper/ paperboard and recycled);
- Optimizing material weight and volume to reduce package impacts without reducing package performance and product protection;

- Considering end of life in material choices (effective after-use disposal and recycling).

As demonstrated above, adopting any of these sub-strategies on a standalone basis will not optimize the environmental footprint of a product and can lead to adverse outcomes. Systems-based thinking is necessary but apparently not widely adopted across Asian companies or even many multinational companies, as demonstrated by their piecemeal approach toward packaging. Some multinational companies do take a systems approach but do not report it publicly as such, perhaps because they find it easier to communicate around single issues.

There are examples of Asian companies working on some of these approaches, which bring various business benefits.

THE STEPS TO SUSTAINABLE PACKAGING

Design packaging to minimize waste and damage

Companies should look at how they can design their packaging to cut waste and damage. None of the Asian companies reviewed in this guide disclosed steps on this sub-strategy but we can cite Nestlé Group's statement on this topic: "The packaging of Nestlé's products is crucial to prevent food waste, guarantee high quality standards and inform consumers. Nestlé is committed to improving the environmental performance of its packaging. Nestlé makes sure that the environmental benefits derived from packaging improvements are not outweighed by increased product losses due to under-packaging."[283]

COMPANIES SHOULD LOOK AT HOW THEY CAN DESIGN THEIR PACKAGING TO CUT WASTE AND DAMAGE. NONE OF THE ASIAN COMPANIES REVIEWED IN THIS GUIDE DISCLOSED STEPS ON THIS SUB-STRATEGY

Use responsibly sourced materials

Using responsibly sourced raw materials in packaging is vital for companies. A common example is the use of responsible sourced fibre if paper and card packaging is required by the FMCG company. FSC certification is a useful tool here. FMCG companies will find this particularly important where they are selling products that are marketed as sustainable or where they have already committed to using sustainable commodities for ingredients. Consumers who buy organic are likely to also want recycled or eco-friendly packaging materials.

Another example is the use of recycled materials such as recycled paper and board instead of virgin fibre. A 2012 PwC study on sustainable packaging[284] noted that the move to substitute virgin materials with recycled ones has gathered pace in the corrugated packaging industry due to more open and informed dialogue between FMCG companies, retailers and packaging manufacturers. It noted that the financial benefits are significant and often shared among this group.

In addition, unrecycled packaging waste has a value that is lost as companies have to purchase newer and more expensive packaging materials.

The responsible production of packaging materials to protect natural resources is a growing theme. Tetra Pak Inc, a key packaging supplier to FMCG companies, sourced 43 per cent of its paperboard as FSC-certified in 2014 and the vast majority of the rest from controlled non-controversial sources. Tetra Pak Inc has launched Moving to the Front[285] – a US focused campaign inviting suppliers, manufacturers, brand owners, NGOs and others to expand attention from the middle and end of the packaging life cycle to the beginning. They say: "We want to lead a new industry commitment to what we call renewability – protecting natural resources and rewarding best practices and innovations that focus on the front end of a packaging lifecycle as well as practices and innovations that will keep the consumer packaged goods industry strong and viable in an increasingly volatile economy."

Within the context of the Moving to the Front campaign, Tetra Pak produced a white paper with WWF entitled *What is Renewability in Packaging, and why should we care?*[286] This white paper explains the concept of renewability, or simply the use of a resource that can be regrown or replenished naturally with the passage of time. While it identifies different stages for a circular model of packaging, such as the assessment of water and energy used during the manufacturing of the packaging and the end of life of the package, the white paper focuses on the renewable sourcing of raw materials as it states this aspect usually receives less visibility.

The following two tables show the steps a selection of Asian FMCG companies have disclosed they are taking on responsible sourcing of packaging raw materials, including sourcing of certified responsible paper-based materials and use of recycled materials.

WWF considers the FSC to be the most credible certification system to ensure environmentally responsible, socially beneficial and economically viable management of forests, leading to responsible paper and paperboard.[287] Indeed, the FSC is the only forest certification scheme with a robust control mechanism that requires yearly audits of certified forest companies, to assess and verify that the criteria are implemented on the ground. These audits require consultation with all stakeholders affected by the forestry operations.

Figure 24: Companies' disclosures on sourcing more responsible paper and paperboard

Company name	Steps disclosed to source more responsible paper and paperboard through use of certified responsible paper-based materials
China Mengniu Dairy Co Ltd[288]	• Mengniu uses FSC-certified Tetra Pak materials to avoid 'one-off' use of forest resources. In its 2008-2013 Social Responsibility Report, the company reported having used 3 billion recycled packs every year, equivalent to 1 million trees saved.
Dutch Lady Milk Industries Bhd[289]	• The company uses FSC-certified materials for the primary packaging for its Dutch Lady UHT milk; it was the first manufacturer in Malaysia to use FSC-certified packaging, in mid-2013. • The effort continues to secondary packaging as the majority of materials used by the company are from sustainable sources.
Hindustan Unilever Ltd[290]	Hindustan Unilever: • Nearly 90 per cent of paper and board used for packing Hindustan Unilever's products is from certified and sustainably managed forests. The paper and board mills selected are FSC-certified. All of the company's carton supply partners are FSC-certified and possess PEFC certification. Unilever Group: • Unilever Group's Sustainable Wood Fibre-Based Material Policy[291] states a commitment to eliminate deforestation from its supply chain and to source all wood fibre-based materials from certified and known sources (full chain of custody) by 2020. • Target of end of 2015 for 100 per cent of all paper and board packaging to be sourced sustainably (recycled, or certified virgin). • Target of 2019 to accept recycled fibre products only when they come from certified sources (with a full chain of custody). • Target of 2020 at the latest to source wood fibre-based materials solely from certified sources (with a full chain of custody). • Will work with suppliers to measure and report its own progress, on a yearly basis. • Will work with its packaging suppliers to develop individual time-bound action plans to deliver a supply chain for certified sustainable wood fibre-based materials. • When the production chain is chain of custody certified, the share of certified virgin fibre or recycled raw material must be gradually increased, according to a time-bound commitment, until the level required by this policy is reached.
Nestlé Malaysia Bhd[292]	• The company has a partnership with The Forest Trust to map and assess supply chains of more than 260 paper and board suppliers across Europe and a number of high priority countries (Brazil, China, India, Indonesia, Malaysia and the US) over the period 2011-2017. • As a result of engaging with paper mills, converters and packaging manufacturers, and 142 visits to its suppliers' sites by December 2014, 53 per cent of its global volume of pulp and paper is responsibly sourced (annual target: 60 per cent). • Nestlé Group has category-specific requirements for pulp and paper including the protection of HCV sites and high carbon stock forests. As FSC best meets Nestlé's criteria for credible certification, it aims to use FSC certification to demonstrate compliance.
Unilever Indonesia Tbk PT	Unilever group: • As above.
Want Want China Holdings Ltd[293]	• The company progressively uses Tetra Pak packaging materials made from sustainable forest products certified by the FSC.

Figure 25: Companies' initiatives on recycled materials

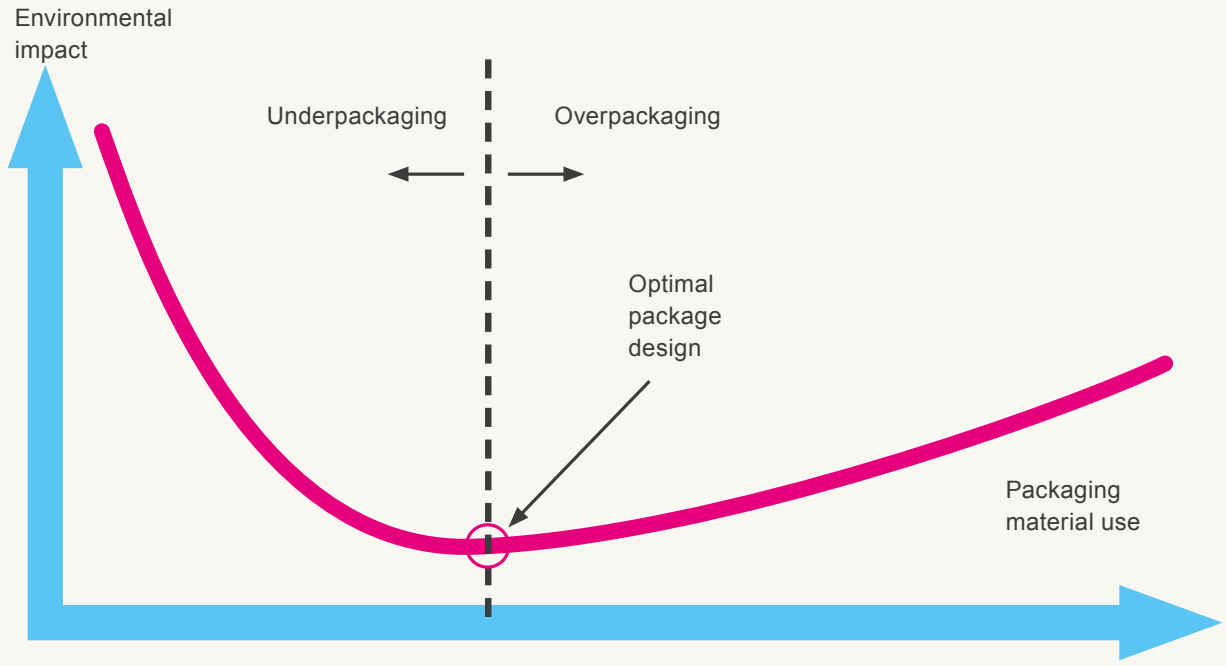
Company name	Initiatives disclosed on the use of recycled materials
Amorepacific Corp[294]	• In 2014 Amorepacific jointly developed the PCR PETG material, a recycled material with physical properties and post-processability equivalent to the existing PETG materials used in its over-cap products. The company is planning to expand the scope of application of the PCR PETG material and is testing its quality with the aim to use the material in its finished products. • At Amorepacific's Beauty Campus in Shanghai in 2014, 54 per cent of the packaging material suppliers switched from the conventional paper packaging material to a reusable plastic packaging material.
Hindustan Unilever Ltd[295 296]	Unilever Group: • Unilever Group used 3,951 tonnes of recycled plastic in its packaging in 2014. The Group's ambition is to use far more in the future so it has started to investigate opportunities to work closely with re-processors and suppliers to develop closed loop systems. Unilever Group is increasingly using recyclable materials such as high-density polyethylene (HDPE) and polyethylene terephthalate (PET) in its plastic bottles. Hindustan Unilever: • Hindustan Unilever has started using r-PET (80 per cent recycled PET) in its blister packs for personal care brands such as Pepsodent toothbrushes and Fair & Lovely.
Nestlé Malaysia Bhd[297]	• Nestlé Group uses recycled materials for packaging where they are equal or better in environmental performance, as demonstrated by life cycle assessment, and do not jeopardize the quality, performance, safety or consumer acceptance of products. The Group used 26.8 per cent of recycled material in its packaging in 2014. • Five Nestlé Waters North America brands (Arrowhead, ReSource, Deer Park, Nestlé Pure Life and Montclair) incorporate r-PET into some of their bottles; the amount of r-PET used varies from 50 per cent to 100 per cent, accounting for 6 per cent of the plastic purchased by the Group and representing 11,793 tonnes of recycled PET per year. The Italian mineral water brand Vera has incorporated 25 per cent of recycled PET in its bottle range, and Nestlé Hungary used r-PET for a plastic tray for seasonal chocolates.
Unilever Indonesia Tbk PT[298]	Unilever Group: • See above.

Optimize material weight and volume to reduce package impacts without reducing package performance or product protection

FMCG companies can consider how to optimize their use of materials through systems thinking. There can be benefits to using less materials where this does not compromise packaging performance. Less materials reduces input costs as well as waste, and reduces pressure on the planet. It can also lower the weight and/or volume of packaging and hence reduce distribution and handling costs.

However, packaging material used in either extreme (increased or decreased materials) can contribute to additional environmental impacts as illustrated on the chart below. This sub-strategy has to be considered alongside the other sub-strategies through systems thinking in order to minimize the environmental footprint in terms of resources used as well as emissions to air and water.

Figure 26: Optimal packaging design[299]



The following table shows a selection of Asian FMCG companies that have taken steps to reduce their use of packaging materials. Note that most of them do not mention the enhancement or at least maintenance of the level of packaging performance in terms of food wastage. It is crucial that they consider such potential knock-on impacts on shelf-life rather than just focus on cost savings through reduced use of materials

Figure 27: Companies disclosing steps to reduce use of packaging materials

Company name	Steps to reduce the use of packaging materials
Amorepacific Corp[300]	• Amorepacific is developing sustainable packaging based on four strategies of Reduce, Recycle, Reuse and Renewable, with the goal of 25 per cent reduction of package use per product by 2020. • Since signing the agreement on the pilot programme for reducing the packaging volume of cosmetic product containers initiated by the Ministry of Environment in 2013, Amorepacific reduced the packaging volume of three products by the end of 2014.
Charoen Pokphand Foods PCL[301]	• Since 2004, the company has been committed to continuous improvement and development of packaging that supports environmental impact mitigation. • Charoen Pokphand has been able to reduce the consumption of plastic and paper by 1,700 tonnes, including 170 tonnes in 2014. Cost savings from 2007-2014 add up to 230 million Baht, which came primarily from the reduction of resources used and the efficiency improvement in packing and loading capacity. This also benefits the company's customers who bear lower transportation cost as a result of increased loading capacity.
Hindustan Unilever Ltd[302 303]	Hindustan Unilever: • Hindustan Unilever committed to reducing the weight of packaging through using lightweight materials, optimizing structural and material design, developing concentrated versions of its products and eliminating unnecessary packaging. • In India, a number of projects with a focus on design and material optimization implemented across categories have resulted in significant reduction of over 700 tonnes of plastic and around 4,900 tonnes of paper in 2014. Unilever Group: • Unilever Group aims to innovate new ways of reducing the resources used for its packaging. The Group focuses on using lighter, stronger and better materials that have a lower environmental impact. Its Strategic Materials Capability Group works together with suppliers, academia and other providers to develop new technologies. The Group is exploring new innovations which will enable them to move into circular models.
Nestlé Malaysia Bhd[304]	• Nestlé Group committed to a target of 2017 to systematically analyze and optimize its packaging portfolio, avoiding the use of at least 100,000 tonnes of packaging material. • It challenged itself during the innovation and renovation design process to find optimal packaging design that allows savings of packaging material and avoids food wastage. • In 2014, Nestlé Group avoided the use of 45,805 tonnes of packaging material (2013: 66,594 tonnes), equivalent to a saving of CHF77.4 million. • Nestlé Malaysia reduced the weight of its MAGGI chilli sauce glass bottles for both the 470g and 300g sizes by 14 per cent and 7 per cent respectively, which translates into a 900 tonnes reduction in glass usage. In 2014, packaging optimization projects in Malaysia enabled the reduction of material usage by 1,382 tonnes.
Unilever Indonesia Tbk PT[305 306]	Unilever Indonesia: • To reduce the amount of packaging materials it uses Unilever Indonesia has invested in cutting-edge design techniques and breakthrough materials. Many of its brands have reduced the amount of materials they use, thus cutting material, energy and transport costs. • Unilever Indonesia is maximizing the pack size of its products and its material capability experts work closely with suppliers to develop innovative solutions focused on reducing packaging. Unilever Group: • As above.

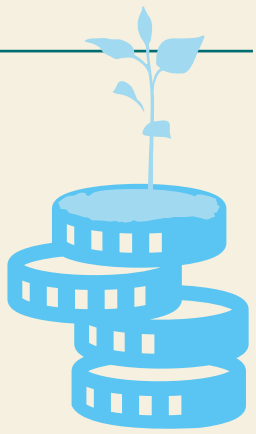
Consider end of life in material choices and work with partners to boost recycling infrastructure

The previous sub-strategy on responsible sourcing minimizes impacts of current packaging material choices, e.g. if paper is to be used, then FSC paper is best.

Beyond material choice, there is also the question of how companies work with regulators and consumers to reduce waste and create better waste management systems, including recycling infrastructure.

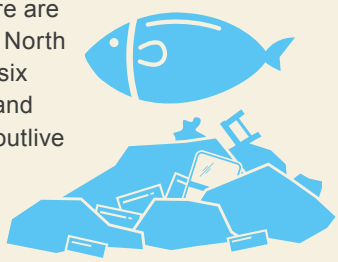
According to the Asian Development Bank, solid waste output from Asia's biggest cities will increase from 760,000 tonnes per day now to almost 2 million tonnes per day by 2025.[307] The Pacific trash vortex (see box text) is a significant example of the problems of too much mismanaged waste.

THE NATURAL CAPITAL COST OF PLASTIC



A 2014 study by Trucost[308] working together with UNEP and the Plastic Disclosure Project[309] estimated the natural capital cost of plastic in the consumer goods industry to be US$75 billion per year, of which food, soft drinks and non-durable household goods accounted for around US$35 billion. The study noted that "Companies in the food, soft drinks and non-durable household goods sectors have the largest natural capital costs in absolute terms and thus are more likely to face reputational and legislative risks from their association with the environmental impacts of plastic, especially litter from packaging." It highlights risks including tougher environmental legislation, damage done to the reputation of brands targeted by campaigners over their association with plastic litter, clean-up costs and disruption to the plastic supply chain caused by resource scarcity and price volatility.

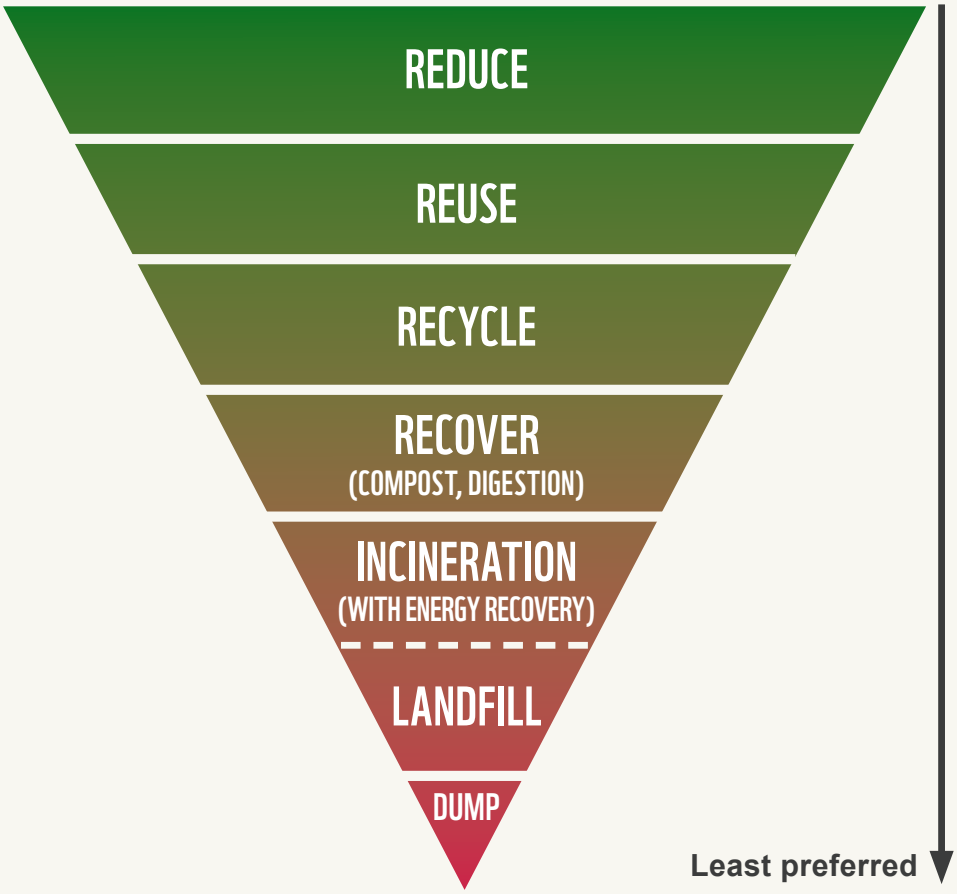
THE TRASH VORTEX



An example of the devastating consequences of poor waste management is the 'trash vortex', an area estimated to be three times the size of Thailand, situated in the North Pacific. There are understood to be a number of such vortexes in the world's oceans,[310] although the North Pacific Gyre is the best known. There, for every kilo of natural plankton, there are six kilos of plastic, much of which is plastic material that has been discarded on land and has made its way via drainage systems into the ocean.[311] Some of this plastic will outlive the grandchildren of the people who threw it away.[312] The area is also choked with other slowly degrading garbage and dead marine mammals and birds that have become entangled in or eaten plastic.

The following diagram[313] shows the preference hierarchy for materials when they come to the end of use phase.

Figure 28: Preference for end of use stage



Effectively achieving reduce, reuse, recycle and recover requires careful consideration. There needs to be a match between the smart packaging designs and the waste management systems in the region where the products are sold. Otherwise these attempts will fail.

Paper and paperboard are a case in point. They are easily recyclable, but often contaminated or otherwise rendered unsuitable for recycling. For recycling to happen, the following conditions are necessary: consumers must recycle the paper and paperboard separately from other materials such as food; the government must arrange collection (directly or through contractors); there needs to be a processing facility that can take in and sort the materials; and there needs to be further distribution to a processing centre or factory that can use the recycled materials.

A critical question is whether waste management infrastructure is growing fast enough to keep pace with the waste. Another is whether governments are enforcing as well as implementing appropriate waste management policies.

One example of a multi-stakeholder initiative to address the waste issue is the Singapore Packaging Agreement (SPA). This is a joint initiative by government, industry including FMCG, and NGOs that started in 2007 with 32 members. It is aimed at reducing packaging waste, which constitutes a third by weight of Singapore's domestic waste.[314] Its members have pledged to and succeeded in reducing their waste significantly. Because of the benefits in waste reduction and cost savings enjoyed by members, a second SPA started on 1 July 2012 and has since then been extended until June 2020. As of 1 March 2016 the programme has 175 signatories who have cumulatively contributed to a reduction of 26,000 tonnes of packaging waste and saved more than US$58 million over the eight-year period.[315]

The SPA's other goals include raising community awareness of packaging waste minimization and introducing supply chain initiatives that foster sustainable use of resources in packaging.

Another example is the Courtauld Commitment[316] (see box text).

THE COURTAULD COMMITMENT

The Courtauld Commitment is a voluntary agreement funded by the UK government that aims to improve resource efficiency and reduce waste within the UK grocery sector. It was originally launched in 2005 as a three-phase plan which ended in 2015. Signatories of the new Commitment, named Courtauld 2025, include 11 retailers (such as Aldi, Asda and Marks & Spencer) representing 93 per cent of the 2016 UK market share and 8 brands and manufacturers (including Coca-Cola Enterprises, Heineken UK and Unilever UK).

Courtauld 1 (2005-2009) looked at new solutions and technologies so that less food and primary packaging ended up as household waste. Over the four-year period 1.2 million tonnes of food and packaging waste was prevented, with a monetary value of £1.8 billion, and a saving of 3.3 million tonnes of CO_2, which is equivalent to the emissions from 500,000 round-the-world flights. As a result of actions by signatories, 520,000 tonnes of packaging waste was avoided across the UK.

Phase 2 of the Commitment (2010-2012) aimed to reduce primary packaging and household food and drink waste, but also included secondary and tertiary packaging, and supply chain waste. It moved from reducing weight to reducing the carbon impact of packaging. A total of 1.7 million tonnes of waste was reduced through the influence of Phase 2. This impact has a monetary value of £3.1 billion and equates to a reduction of 4.8 million tonnes of CO_2.

Phase 3 (2013-2015) aimed to help deliver sustainable growth, save money and reduce environmental impact by focusing further on waste reduction in the food and drink sector. Specifically it looked to improve packaging design to help consumers reduce waste, make it easier to recycle, increase recycled content and ensure there is no increase in total carbon impact of packaging. This could mean an average reduction in carbon intensity per pack of a further 3 per cent. Courtauld 2025 aims to cut the resources needed for food and drink production by one-fifth in 10 years.

The following table shows some of the steps disclosed by the group of Asian FMCG companies to build end of life considerations into their packaging choices (for example, through conducing life cycle assessments and taking steps to boost recycling infrastructure).

Note that life cycle analysis does not take into account biodiversity and ecosystem impacts such as water minimum flows and biogenic carbon emissions (i.e. emissions from land use occupation such as below and above ground biomass carbon flows). As such, end of life considerations should ideally be complemented with certification standards for the original extracted materials to ensure a more sustainable packaging solution.

Figure 29: Companies disclosing steps on end of life considerations

Company name	Steps to build end of life considerations into packaging decisions and to boost recycling
Amorepacific Corp[317]	• Greencycle is Amorepacific's public initiative which involves customers to recycle cosmetic containers. The company collects empty containers and practises the creative circulation of resources. Up till 2013, 431 tonnes of empty containers were collected and Amorepacific is conducting research on the recycling of cosmetic containers. They were able to use recycled OPE bio essence containers as raw materials to make new cosmetic containers and recycled five tonnes in this way. The remainder of the plastic was recycled into plant pots, candles or art pieces to drive consumer awareness on recycling. • Through the Greencycle campaign, they plan to innovate all of their product development processes from production to collection.
China Mengniu Dairy Co Ltd[318]	• China Mengniu was the first in China to raise the idea of 'paid packaging recycling'. The company installed packaging recycling machines in supermarkets and consumers can get a certificate for recycling and a ticket for a Mengniu event after putting a certain amount of packaging into the machine. • The company states this campaign has activated 'paid ecology', a model aimed to encourage public participation in environmental protection. • By the end of 2013, China Mengniu Dairy Co Ltd together with Tetra Pak recycled more than 40,000 tonnes of packaging materials, which could be used to pack 4 billion packs of milk or circle the Earth 10 times.
Hindustan Unilever Ltd[319]	Hindustan Unilever: • Hindustan Unilever is working in partnership with the industry, governments and NGOs to increase recycling and recovery rates in its packaging. In 2014 the company launched its Partner To Win 2020 programme to create a supplier ecosystem where partners work with Hindustan Unilever and each other to create breakthroughs in products or packaging to deliver the capacity, innovation and sustainable solutions to meet its growth ambition. The company has started using rPET (80 per cent recycled PET) in its blister packs for personal care brands like Pepsodent toothbrushes and Fair & Lovely. This ensures there is an application for newly available rPET resin in the market thereby establishing circular economy thinking. Unilever Group: • Unilever Group[320] states that it aims to halve the waste associated with the disposal of its products by 2020 and that it has taken a life cycle approach with a baseline of 2010. It reduced its waste footprint, versus the 2010 baseline, by 12 per cent per consumer use in 2014.

Company name	Steps to build end of life considerations into packaging decisions and to boost recycling
Indofood CBP Sukses Makmur Tbk PT[321]	● The company formed a coalition with five consumer goods companies in 2010 to pilot the Waste Bank programme in Pejaten, Pasar Minggu, South Jakarta. Waste Bank is a community assistance programme that actively engages local communities to develop ways to reduce, reuse and recycle packaging and other household waste.
Nestlé Malaysia Bhd[322]	● Nestlé Group has expanded the scope of its packaging ecodesign by moving from PIQET, a tool that assesses the environmental performance of its packaging, to Ecodesign for Sustainable Product Development and Introduction (EcodEX), a broader, more holistic approach that covers the entire value chain. ● Nestlé Malaysia takes a holistic approach to assessing the environmental impact of its packaging and it uses the analytical life cycle assessment (LCA) tool to select the optimal packaging solution. The LCA covers the environmental impact of packaging throughout the supply chain from material extraction and manufacturing process to disposal after consumption of the product.
Unilever Indonesia Tbk PT[323]	Unilever Indonesia: ● Aware that only 28 per cent of its primary packaging is being recycled though recycling industries and waste collectors, Unilever Indonesia's strategy in waste collection aims to increase the collection rate of post-consumer packaging by developing various waste collection channels such as waste banks and a partnership with waste collectors, before it ends up in final disposal sites. ● Currently Unilever Indonesia is working on two technologies to solve this issue: plastic recycling technology for flexible packaging waste, and using municipal solid waste to generate energy. ● Unilever Indonesia is conducting various studies on plastic recycling technology which aim to break down flexible waste and turn it into factory-grade plastic pellets. ● In 2011, Unilever Indonesia, in collaboration with five other multinational and national companies, established a non-profit coalition named the Coalition for Sustainable Packaging (CSP). Addressing the problem of post-consumer packaging waste, CSP has four missions: ○ Improve management of post-consumer packaging waste; ○ Increase stakeholders' awareness of the importance of managing post-consumer packaging waste and of methods to manage waste; ○ Promote the collaboration of CSP; ○ Perform collective advocacy for policies on post-consumer waste. ● Unilever Indonesia applies the principle of Reuse, Reduce, Recycle and Eliminate. This approach covers waste management throughout the value chain, ranging from products and packaging to its operations in Indonesia. The company strives to reduce its environmental footprint by increasing the volume of material recycled and minimizing disposal in landfills or by incineration.[324] Unilever Group: ● As above.

5. THE BENEFITS OF MORE SUSTAINABLE PACKAGING FOR FMCG COMPANIES

USING SUSTAINABLE PACKAGING SAVES MONEY

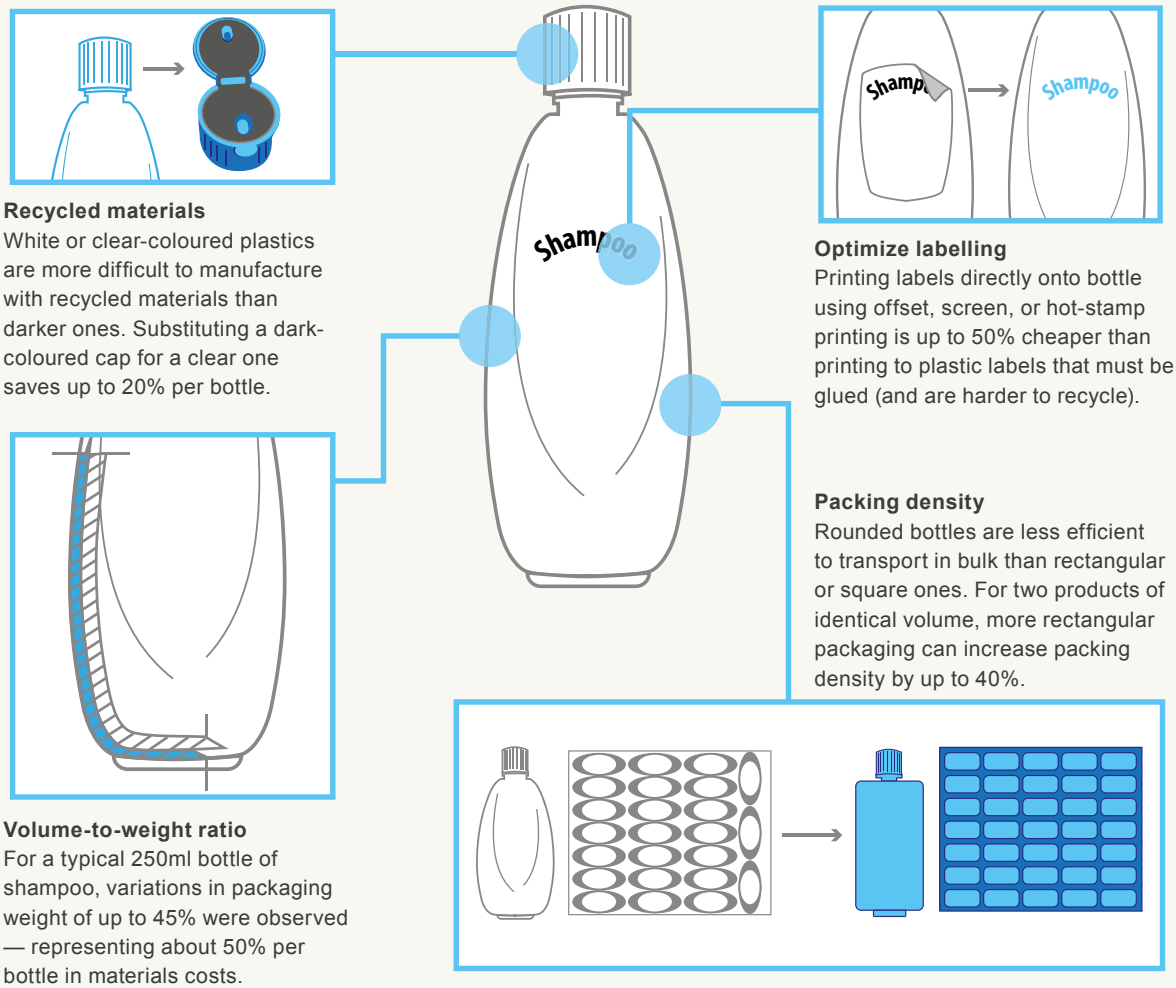
A 2011 KPMG REPORT STATED THAT PACKAGING CAN ACCOUNT FOR 8 PER CENT OF THE COST OF FOOD PRODUCTS AND UP TO 40 PER CENT OF THE COST OF MANUFACTURING COSMETICS

Packaging is a large cost for FMCG companies: A 2011 KPMG report stated that packaging can account for 8 per cent of the cost of food products and up to 40 per cent of the cost of manufacturing cosmetics.[325] The same report noted that "the need to spare costs and preserve margins, exacerbated by wary consumer buying attitudes, has prompted many producers to double-down on efficiency drives, redesigning bottles and lids to use less plastic, shortening distribution networks to save on fuel, embracing lean techniques to reduce waste and spoilage, and using cheaper, lighter, recyclable materials in packaging."

As multiple examples show, packaging optimization, whether it relates to reducing waste at the source or embracing the cradle-to-cradle approach, can result in cost savings for FMCG companies.[326] These cost savings need to be achieved without any loss in the performance of the packaging in its primary role to prevent product damage and waste so as not to increase the net environmental impact of the product along its entire value chain.

A 2009 McKinsey report[327] based on research into packaging and manufacturing costs in the European FMCG industry demonstrates how simple design changes can result in packaging reduction and cost savings for FMCG companies manufacturing shampoo.[328] These changes can also enhance the recyclability of the package as well as enable greater use of recycled materials in the packaging. The report stated that "few companies examine the cost of trade-offs implicit in their packaging decisions, much less look to their competitors for ideas. Such decisions tend to be the domain of marketers, since packaging is a key element of communicating a company's brand to consumers. Yet we have seen organizations reap considerable savings. One consumer goods maker reduced its packaging costs for a key product by 10 per cent by making straightforward design changes that allowed it to use less plastic in manufacturing the product's bottle."

Figure 30: The factors that influence the cost and complexity of packaging shampoo



Recycled materials
White or clear-coloured plastics are more difficult to manufacture with recycled materials than darker ones. Substituting a dark-coloured cap for a clear one saves up to 20% per bottle.

Optimize labelling
Printing labels directly onto bottle using offset, screen, or hot-stamp printing is up to 50% cheaper than printing to plastic labels that must be glued (and are harder to recycle).

Packing density
Rounded bottles are less efficient to transport in bulk than rectangular or square ones. For two products of identical volume, more rectangular packaging can increase packing density by up to 40%.

Volume-to-weight ratio
For a typical 250ml bottle of shampoo, variations in packaging weight of up to 45% were observed — representing about 50% per bottle in materials costs.

Other examples include:

- In 2014, **Nestlé SA** avoided the use of 45,805 tonnes of packaging material (2013: 66,594 tonnes), equivalent to a saving of CHF77.4 million.[329] A specific example is Nestlé Singapore, who reduced the packaging material in the carton boxes used to pack NESCAFE® Original 3-in-1 Coffee in 2014.[330] This enabled the company to save SG$65,800 and lower its paper packaging material consumption by about 32 tonnes annually.

- **Unilever NV** has worked with external technology experts Mucell and Alpla to commercialize Mucell technology to inject gas while blow-moulding bottles. The gas creates bubbles in the middle of the pack walls, reducing the plastic component by up to 15 per cent while the bottle remains 100 per cent recyclable. In March

Many typical types of fast moving consumer goods packaging, from paperboard to plastic

© WWF/RICHARD STONEHOUSE

2014, Unilever NV launched the first Dove 250ml bottle using this technology and has saved 200 tonnes of HDPE, and €110,000. The company estimates savings of up to 27,000 tonnes of plastic resin once this technology is applied fully across its portfolio of products and anticipates potential cost savings of up to €50 million.[331]

- For its Gilette Blades and Razors category,[332] **Procter & Gamble Co** switched its high-volume North America club packaging from plastic thermoform clamshells to a paperboard primary carton in 2011 – a reduction of 164,000kg of packing material per year. This new carton made the product over 50 per cent more efficient to ship and resulted in over US$1 million in annual cost savings. According to P&G: "Consumers like it better because it's easier to open, and our retail partners like it because it's more visually appealing on the shelf." P&G also has a goal that 100 per cent of its paper packaging should contain recycled or third party certified virgin content by 2020,[333] hence the switch from plastic to paper does not result in a higher environmental footprint.

- **Charoen Pokphand Foods PCL** has been able to reduce its consumption of plastic and paper by 1,700 tonnes, 170 tonnes of which occurred in 2014.[334] The accumulated cost savings for 2007-2014 amounted to 230 million Baht, which came primarily from the reduction of resources used and the efficiency improvement in packing and loading capacity. This also benefits the company's customers who bear lower transportation costs as a result of increased loading capacity.

USING SUSTAINABLE PACKAGING ENHANCES BRANDING AND REDUCES REPUTATIONAL RISK

Packaging's primary function has always been to protect products. However, as consumers have become more sophisticated and demanding, it has also become an important business tool that organizations use to attract attention, describe the product and achieve higher sales. Packaging is a key attribute of FMCG companies' marketing strategy and has the ability to influence all other elements of the marketing mix, namely product, place, price and promotion.

More and more FMCG brands are making responsible sourcing policies for their product ingredients, as highlighted in the certified commodities chapter. As such, it does not make sense for these companies to use unsustainable packaging to communicate the sustainability credentials of the products contained within. John Perkins, vice president of Strategic Customer Partnerships at global paperboard and plastics packaging manufacturer MeadWestvaco, stated that: "If a company offers natural or ecofriendly products, then consumers expect that its packaging is sourced and manufactured in an equally environmentally responsible way."[335] In these cases, sustainable packaging is part of the brand image and part of the marketing strategy.

A further consideration is that today, numerous brands are identifiable through their packaging and FMCG companies do not wish to be seen as contributing to the global

pollution problem through the highly visible discarded packaging remains of their products. There is growing public awareness of the waste problem in Asia, where mountains of waste, from plastic bags to discarded mobile phones, are overwhelming some of its largest cities. As a result, there is growing consumer demand for sustainable packaging.

A 2013 study[336] found that the two aspects for which consumers would be willing to pay more around packaging were for "packaging that keeps food fresh longer" and "packaging that is environmentally friendly" (55 per cent for each). Countries most interested in environmentally friendly packaging included China (64 per cent), Malaysia (65 per cent) and Indonesia (67 per cent).

A 2014 report[337] by Smithers Para, a specialist consulting firm focusing on packaging, paper and print industry supply chains, highlighted that awareness among consumers is driving demand for sustainability, particularly packaging that has a smaller environmental footprint. It predicts that Asia will be the largest market for sustainable packaging in the world by 2018, accounting for 32 per cent of the overall market.[338]

According to the Tetra Pak Environment Research 2015,[339] a survey which included 6,000 respondents across 12 countries, 77 per cent of consumers claimed that environmentally sound packaging makes them more likely to choose a beverage brand. The survey also found that 85 per cent of consumers sort and set aside waste for recycling and 70 per cent of consumers look for environmental information or labelling on the products they buy, a rise from 39 per cent in 2009. This latter figure reached 79 per cent in India and 64 per cent in China while only 24 per cent of consumers in the UK and the USA and 18 per cent in Japan claimed they look for environmental logos on the products they buy. In China, according to the report *Corporate Strategy and Competitive Advantage in China's War on Pollution – Pursuing China's New Consumer* by the China Carbon Forum,[340] 73 per cent of respondents surveyed were willing to pay extra money for green products, of which over 8 per cent were willing to pay 10 per cent more.

This can provide real opportunities for FMCG companies who want to be one step ahead of their competition and see their earnings grow by differentiating themselves through more sustainable packaging.

On the flip side, if FMCG companies do not pursue sustainable packaging strategies, they can run into reputational risks or lose customers. Waste reduction is an important issue for consumers and people increasingly indicate a readiness to switch or to boycott brands that behave irresponsibly with regard to the environmental impact of packaging.[341]

The following examples demonstrate how FMCG companies can use packaging to market their sustainability credentials and how they need to manage reputational risk associated with their packaging use:

THERE IS GROWING PUBLIC AWARENESS OF THE WASTE PROBLEM IN ASIA, WHERE MOUNTAINS OF WASTE, FROM PLASTIC BAGS TO DISCARDED MOBILE PHONES, ARE OVERWHELMING SOME OF ITS LARGEST CITIES

- **Closed Loop Recycling and Ecover** have launched a highly innovative initiative which collects waste plastic recovered from the seas around the UK by EU fishermen, sends it to the UK for recycling at Closed Loop's facility, and reuses it in new packaging. On its consumer facing website, Ecover explains the problem of marine pollution by plastic and how it is trying to be part of the solution rather than the problem. Its special edition bottle using the recycled plastic carries a label saying: "This bottle of washing up liquid is made with ocean plastic."[342]

- In 2012 a group of California elementary school students gathered more than 90,000 signatures on a petition[343] asking marker pen company **Crayola LLC** to 'make its mark' on recycling its used markers. Crayola LLC initially responded that it had no facilities or process in place for a recycling programme.[344] The campaign inspired a competitor, Dixon Ticonderoga Co, to launch its own programme[345] for recycling used marker pens. The publicity and potential loss of business led to Crayola LLC announcing its own recycling programme for used plastic markers.[346] [347] The Crayola example shows that with the increasing use of social media a message that can threaten a company's image takes little time to reach people.

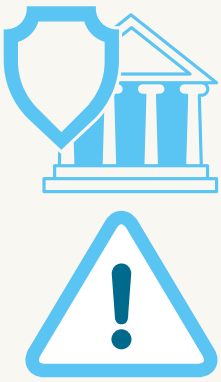
- **Kraft Foods Group Inc** was targeted in 2015 by a campaign accusing the company of using packaging that is hard to recycle for its Capri Sun pouches. The Make It, Take It campaign[348] is supported by organizations including Greenpeace and the Natural Resources Defense Council. According to its estimates, 1.4 billion Capri Sun pouches are landfilled or littered each year in the US and only 1 per cent of pouches are collected nationwide. This is the sort of negative publicity and potential reputational risk that FMCG companies adopting sustainable packaging can avoid.

USING SUSTAINABLE PACKAGING INCREASES OPERATIONAL RESILIENCE

Another reason for adopting more sustainable packaging is to become more operationally resilient and reduce regulatory risk related to raw materials. Investing in a responsible sourcing strategy now will ensure a stable supply of packaging materials in the future. This can be beneficial in terms of spreading risks and avoiding material availability disruptions and price shocks for certain materials.

As Coca-Cola Co stated: "Any time the cost of packaging materials like petroleum and aluminum increases, or any time the supply of those materials is disrupted, it means potential harm for our business."[349]

See the commodities chapter for further insight into supply chain disruption and regulatory risk from raw materials.



USING SUSTAINABLE PACKAGING REDUCES REGULATORY RISK

Companies adopting sustainable packaging strategies and considering end of life in material choices are better placed to mitigate regulatory risk.

As paper-based packaging forms a significant component of most FMCG companies' packaging needs, sustainable packaging can ensure that FMCG companies are not exposed to regulatory risk through the purchase of imported packaging materials derived from illegal timber harvesting. While this may impact the Lacey Act in Asia, the potential tightening of regulatory requirements will put companies at risk if they are sourcing such packaging materials.

Similarly, the European Parliament agreed a resolution[350] in January 2014 regarding the strengthening of EU laws on plastic waste. One of the aims included introduction of specific and binding targets for recycling. The resolution noted that plastic waste "should be treated as a valuable resource by promoting its reuse, recycling and recovery" and called on the Commission to make proposals to phase out the landfilling of recyclable and recoverable waste by 2020 while introducing measures to discourage incineration of recyclable, compostable and biodegradable plastics.

Government regulation can have an indirect impact on FMCG companies' sales where it changes consumer behaviour. For example, if consumers are not able to easily (or at no cost) dispose of non-recyclable materials, they may switch to purchasing products using recyclable packaging. Examples of government regulation that may impact consumer behavior include:

- The introduction of payments for non-recycled waste in Taipei city where the 'fee-per-bag' policy reduced domestic waste production by one-third and tripled collection of recyclable materials.[351]

- Vancouver city will only collect waste that is properly sorted and provides recycling bags for free.[352] However it charges consumers extra for additional volumes of non-recyclable garbage beyond a single bin allowance through the issuance of payment stickers without which garbage bags are not collected.

Such risks are appreciated by FMCG companies such as Coca-Cola Co which stated that: "Changes in laws and regulations relating to beverage containers and other packaging could increase our costs and reduce demand for our products."[353] Similarly Unilever explains that: "An increasing number of national, sub-national and local governments are taking action to tackle the environmental impacts of packaging waste. Some of these actions, such as eco-taxes or bans on particular packaging formats, are unlikely to result in higher recycling and recovery rates. However, they will entail significant costs to businesses."[354]

COMPANIES ADOPTING SUSTAINABLE PACKAGING STRATEGIES AND CONSIDERING END OF LIFE IN MATERIAL CHOICES ARE BETTER PLACED TO MITIGATE REGULATORY RISK

6. OVERCOMING HURDLES TO SUSTAINABLE PACKAGING

HURDLE: SUSTAINABLE PACKAGING IS A COMPLEX ISSUE

It can be difficult to pinpoint the advantages and trade-offs of packaging solutions. Unintended consequences can come from a packaging change if the issue is not thoroughly investigated and analyzed at a systems level. The need to assess the environmental impact (including the water, carbon and forest footprint) of packaging materials and their products over the whole product life cycle is highly complex.

Solution: There are existing resources and protocols, such as life cycle analysis and the Global Packaging Protocol that companies can use to accelerate their learning.

Examples: Nestlé SA[355] has adopted a tool called Ecodesign for Sustainable Product Development and Introduction (EcodEX) which takes a broader approach covering the entire value chain. Nestlé SA focuses on finding optimal packaging design that allows it to save packaging material and avoid food wastage. It also leads the development and use of materials from sustainably managed renewable resources, considering packaging and product performance requirements, and supports initiatives to recycle or recover energy from used packaging. Nestlé uses recycled materials where there is an environmental benefit and it is appropriate.

In 1969 **Coca-Cola Co** commissioned the first study to examine the whole environmental impact of a package, laying the framework for the life cycle assessment methodology used today. The company is advancing sustainable design efforts through an initiative known as e3, which focuses on improving efficiency, life cycle effectiveness and eco-innovation. For example, using state-of-the-art computer design software, Coca-Cola Co has effectively reduced and improved the impact resistance of its most recognizable package – the glass contour bottle.[356]

Reckitt Benckiser Group plc has developed a Sustainable Innovation Calculator[357] to help create more sustainable products. The tool uses a simple traffic light system that allows product developers to quickly understand the environmental footprint of their innovation compared to that of a similar product. The Calculator is a streamlined life cycle analysis tool that models the most significant environmental impacts of its products, including raw materials and consumer use. Reckitt uses it at key decision points to ensure it is making more sustainable choices affecting the carbon footprint, water impact, packaging or ingredients. To count towards its net revenue target, a

product innovation must score better in at least one of the following categories without scoring worse in any others: Carbon, Water, Ingredients, Packaging (the product must use less packaging overall or use less virgin packaging material resulting in a significant saving (>10 per cent) in the weight of virgin packaging per dose (after subtracting any post-consumer recycled content)).

HURDLE: COSTLY INVESTMENT IN RESEARCH AND DEVELOPMENT (R&D)

As sustainable packaging is an innovative field, R&D is needed to find the best packaging alternatives for companies' products, customers and supply chains. The upfront cost of R&D is a barrier for some companies.

Solution: Investments in process improvement are typically lower than those in development of new materials. Investment in R&D needs to be considered on the basis of the benefits and returns it will provide and in light of other potential uses of capital. There are multiple examples of positive returns. Companies can also work together through industry alliances that will provide synergies in R&D.

Examples: Brewing company **Kirin Holdings Co Ltd** worked with manufacturers, distributors and retailers to standardize the secondary corrugated packaging of PET bottled drinks, reducing the amount of packaging and improving supply chain efficiency. This led to a 10 per cent reduction in CO_2 emissions, and also improved the operational efficiency of retailers, making it easier for workers to open and unpack bottles.[358]

HURDLE: CONSUMER MISUNDERSTANDING OF SUSTAINABLE PACKAGING

Consumers often do not have enough information to understand the advantages and disadvantages of a specific package, and can make decisions that are detrimental to sustainability. Consumers can also be deliberately deceived by greenwashing, or confused by the overload of information from eco-labels.

Even where consumers are trying to do the right thing, they will not always take the right action. For example, consumers generally consider bioplastics to be 'green', but the reality is more complex. Bioplastics have the potential to be more environmentally sustainable than fossil-based plastics. However, they have many impacts of their own, largely centered on the cultivation of agricultural feedstocks, which requires the use of land, water and chemicals. If these factors are not managed properly, a bioplastic could be as damaging as a fossil-based plastic.

Compostable plastics have particular issues. Some FMCG companies are using this relatively new innovation. The compostable plastics can end up in the conventional post-consumer plastic waste cycle as consumers are unaware of the difference. However, it is not possible to recycle most compostable plastic, so they contaminate the

FMCG COMPANIES CAN WORK TOGETHER VIA INDUSTRY INITIATIVES TO IMPROVE CONSUMER UNDERSTANDING AND SUCH ALLIANCES CREATE MORE POWERFUL MESSAGES AND ARE MORE COST EFFECTIVE THAN INDIVIDUAL COMPANY EFFORTS

recycling stream when mixed with other plastics. There are fears that increasing use of compostable plastics may undermine existing efforts to recycle plastics.[359]

In addition, FMCG companies have not properly communicated the benefits of sustainable packaging in consumer-centric terms. Most FMCG companies communicate their improvements in sustainability or corporate responsibility terms rather than closing the loop with consumers from a value-add perspective, i.e. smarter packaging is good for consumer wallets and the environment.[360] Changing this communication style can help increase consumer actions in terms of choice of product and also recycling actions.

Solution: Educate consumers about sustainable packaging, and how it can lower the overall environmental footprint of consumption and also save money for consumers, including how consumer actions can help. FMCG companies can work together via industry initiatives to improve consumer understanding and such alliances create more powerful messages and are more cost effective than individual company efforts.

Examples: The **Sustainable Packaging Coalition**,[361] whose members include large FMCG companies, acknowledges that "the proliferation of recycling-related labels on today's packaging creates confusion in the marketplace, i.e. recovery-related messaging and its associated iconography on packaging, such as 'please recycle' and '100 per cent recyclable' give the erroneous impression that a package can be recycled everywhere". In response, it has initiated the How2Recycle Label[362] to address these issues, and to:

- Reduce confusion by creating a clear, well-understood, and harmonized label that enables industry to convey to consumers how to recycle a package after its use;
- Improve the reliability, completeness, and transparency of recyclability claims through a nationally relevant data set on access to recycling for all packaging materials and forms;
- Provide incentive for industry to participate in a pre-competitive labeling initiative that follows Federal Trade Commission Green Guides.

The **On-Pack Recycling Label scheme**[363] in the UK was launched in March 2009 to communicate better with consumers about what types of packaging can be recycled. The British Retail Consortium developed the scheme for retailers and brand owners in partnership with WRAP. Under the scheme, packaging can be labelled as 'widely recycled', 'check local recycling' and 'not currently recycled'. Special labels were also created for packaging that is mainly collected at collection points rather than at the kerbside, like composite beverage cartons and some plastic films that are collected with carrier bags. Over 145 organizations signed up to the scheme with the label being used in over 75,000 product lines. They include a diverse range of grocery and non-grocery brands and retailers like Asda, Marks & Spencer, Morrisons, Sainsbury's, Tesco, The Co-op, Waitrose, John Lewis, B&Q, Boots, PepsiCo, Ecover, Warburtons and The Home Retail Group.

HURDLE: LACK OF STANDARDS TO IMPOSE SUSTAINABLE PACKAGING

There is no universal definition of 'sustainable packaging' and no one body to regulate its use. This is partly due to the complexity of packaging.

Solution: Initiatives where companies can collaborate with parties throughout the entire value chain are developing, and self-regulation is possible through communication of measurable time-bound milestones which allow stakeholders to hold the company to account. Companies can also refer to the Global Packaging Protocol to guide them toward best practice.

Examples: Nestlé SA's self-imposed sustainability goals and packaging policy saved the company between 40 and 70 million kg of materials over the two decades up to 2012.[364] The policy focuses on reducing the environmental impact of Nestlé SA's packaging, while not compromising on safety, quality or consumer acceptance.[365]

Procter & Gamble Co announced in 2014[366] an expanded set of sustainability goals to include packaging sustainability as a key priority. The company is on track to reduce packaging by 20 per cent per unit of production by 2020. Given this progress, P&G is raising the bar, committing to doubling the use of recycled resin in plastic packaging, and ensuring 90 per cent of its product packaging is recyclable or that programmes are in place to create the ability to recycle it.

In addition to these two expanded goals, P&G is working across its supply chain to develop the capability by 2020 to replace top petroleum-derived raw materials with renewable materials, as cost and scale permit.

The **Bioplastic Feedstock Alliance,**[367] convened by WWF, is a good example of a collaboration to help guide sustainable packaging developments. It was launched by eight of the world's leading consumer brands with the aim to support the responsible development of plastics made from plant-based material and thereby help build a more sustainable future for the bioplastics industry. These founding members include Coca-Cola Co, Danone SA, H.J. Heinz Company and Nestlé SA. Together with respected academic and NGO thought-leaders such as WWF they are committed to guiding the responsible selection of feedstocks for bio-based plastic. This will ensure that plant-based plastics are sourced from renewable materials whose production is responsibly managed, does not result in the destruction of critical ecosystems and provides environmental benefits with minimal negative impacts.

HURDLE: CREATING AN EFFECTIVE RECOVERY AND RECYCLING SYSTEM IS CHALLENGING

Efforts to optimize resources and find the best packaging can be jeopardized by low recovery rates and lack of subsequent recycling facilities thus limiting the availability of high quality recycled material and the value of designing packaging for recovery.

FMCG COMPANIES CAN PARTICIPATE IN RECOVERY EFFORTS, SUPPORT WASTE POLICIES AND RAISE CONSUMER AWARENESS OF THE NEED TO SORT WASTE AND RECYCLE

An effective recovery and recycling system requires behavioural change on the part of consumers to ensure high recovery rates and also on the part of governments to invest in adequate recycling infrastructure.

Solution: FMCG companies can participate in recovery efforts, support waste policies and raise consumer awareness of the need to sort waste and recycle. Strategies to promote recovery and recycling of recyclable products should also be put in place to diminish the overall footprint of individual products and collect limited resources.

Examples: Tetra Pak Inc,[368] a large packaging supplier to the FMCG sector, works together with many of its FMCG customers (and governments and civil society) to increase recycling rates, for example by improving consumer access to recycling infrastructure. In Japan, Tetra Pak Inc developed together with a branded soy milk producer, Marusan-Ai Co Ltd, and a transport company, the Marusan-Tetra Pak Recycling Service.[369] This is a collection system in which consumers recycle their used cartons by mail, for free. The cartons are then shipped to a paper manufacturer to be turned into a range of recycled paper products.

Unilever Brazil Ltd[370] works closely with other CGF companies and a local NGO called CEMPRE to promote recycling, raise awareness at government and NGO level, and help workers economically. The programme increases the number of drop-off points for packaging, and increases the number of cooperatives who sort and bale recyclable materials. It also increases the number of material types recycled. Unilever's partner, Brazilian retailer Pão de Açúcar (part of the Casino group), has drop-off points outside its stores where consumers can bring used packaging for recycling. Unilever brands also engage with consumers to encourage recycling. It currently supports 139 recycling stations across 12 states, as well as 39 cooperatives that generate income (directly and indirectly) for more than 5,500 people. In 2014, it collected over 10,000 tonnes of material for recycling. It has collected over 85,000 tonnes since the programme began. Unilever NV is now working with TIMPSE in Thailand, CEMPRE Colombia and CEMPRE Uruguay to replicate the success of CEMPRE Brazil.

The Closed Loop Fund is an initiative in the US supported by FMCG companies such as Coca-Cola Co, Pepsi Co Inc, Unilever NV, Procter & Gamble Co, Johnson & Johnson and other US corporations such as Wal-Mart Stores Inc and Goldman Sachs Group Inc. They have invested millions of dollars in a social impact fund charged with increasing the recycling and recovery rate in the US. The fund will achieve this goal by providing zero interest loans to communities to develop recycling infrastructure. The fund links the financial interest of companies that need recycled material back in their supply chain (to reduce cost) to the capital that municipalities need to invest in recycling infrastructure.

Household and personal care items on Indonesian supermarket shelves

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