



Small formats and sachets

exploring challenges,
solutions and
interventions

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List of abbreviations

ABLs	aluminium-based laminates
BOPP	biaxially oriented polypropylene
EPR	Extended Producer Responsibility
EWPs	economically wrapped packs
F&B	food and beverage
FMCG	fast-moving consumer goods
FSSAI	Food Safety and Standards Authority of India
HDPE	high density polyethylene
MLPs	multi-layered plastics
PBLs	plastic-based laminates
PE	polyethylene
PET	polyethylene terephthalate
PP	polypropylene
SKU	stock-keeping unit

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Introduction



It is well known that small format plastic packaging, especially sachets, is immensely popular in India. First introduced in the 1980s, sachets were seen as a way to penetrate the rural market, primarily consisting of low-income households with limited disposable income. Along with affordability, sachets offered rural consumers access to branded products while allowing them to control portion sizes. Today sachets have established themselves as an independent segment, driving sales of a variety of fast-moving consumer goods (FMCG) products. The use of small format packaging may have begun with personal care products, but over the years food products overtook those in popularity (in terms of number of units sold).

However, small formats present a significant challenge in terms of waste management and littering. They are typically made of flexible, multilayer plastics (either a combination of different polymers or a combination of polymer and metal foil, both difficult to separate) and are not amenable to recycling at scale, with technology available at present in India. Their small size and light weight make them hard to collect, sort, aggregate, and transport. Moreover, since they are of low value, the effort put into collecting these small formats is not worth the

price fetched. This clearly indicates the importance of setting up waste management practices and alternative delivery models, tailored to these formats.

This report is the second of two insights reports brought out by the India Plastics Pact to better understand the prominence of small format packaging in India and identify interventions, including elimination, which can help improve the management of waste generated from their use/disposal.

The first insights report, published in May 2023, analysed sales data of 29 FMCG products to derive high-level inferences on the current landscape of small format and sachet packaging. The data showed that three out of four FMCG units sold in the country are in small formats (below 50 g or 50 ml in size) and nearly half of these small formats (48%) are sold in the form of sachets (below 10 g or 10 ml in size).

A segment-wise analysis showed that the personal care segment had the highest share of small format units (95%), followed by food and beverage (78%), and home care (17%). Salty snacks (24%), shampoo (19%) and biscuits (15%) were the three products which contributed most to the unit sales of small formats.

¹ In this study, weight, instead of packaging size/dimension, was used to define the cut-off. This is because data on the size of packaging were not available.

The insights report also introduced a conceptual framework that can be used to suggest interventions to better manage small format and sachet packaging waste. The framework follows the Eliminate, Innovate and Circulate principles of the Plastics Pact model.

Eliminate

As a first step, businesses should consider using small format and sachet single-use packaging only where required and removing it where it is unnecessary and problematic.

Innovate

If elimination is not possible, businesses should innovate to ensure that packaging placed on the market is reusable, recyclable, or compostable in the Indian context. This can be done by

- improving the material quality,
- removing non-recyclable elements, such as transitioning from multi-layer to mono-layer packaging,
- considering more recyclable formats or material substitutions², and,
- exploring reuse and refill delivery models.

Circulate

It is important to ensure that small format packaging waste is effectively managed in that, collection, segregation, and effective waste management practices are put in place to close the loop and prevent leakage into the environment. Perhaps collection is the most basic of these, the starting point, making it important to explore ways of increasing the collection rate of these 'low-value' small formats. This can be done by

- investing in consumer behaviour change programmes to implement segregation at source,
- investing in collection systems,
- incentivising collection of small formats,
- identifying viable end markets, and,
- increasing installed capacity for recycling.

Implementation of this framework requires a deeper analysis of market data to identify products, locations (rural or urban) and interventions best suited for action at scale.

The current report sets out to do this by,

- digging deeper into the available data and engaging with stakeholders from across the plastics value chain to identify suitable interventions, and,
- understanding the challenges associated with suggested interventions.



Photo courtesy: India Plastics Pact collection, 2024

² When considering material substitutions, care should be taken to prevent unintended consequences.

Methodology



Data overview

Market data on the sales of 29 major FMCG products (Annex 1) were purchased from the marketing research company, Nielsen IQ (Nielsen Consumer LLC), during the first phase of the study. For each of these products, data were procured for the urban and rural markets for the years 2019, 2020, and 2021 on the following parameters:

- packaging format used,
- size of stock-keeping unit (SKU) sold (referred to in the document as pack size),
- number of units sold,
- weight (for solids) or volume (for liquids) of product sold, and,
- sales value.

During the first phase, the data was cleaned to improve consistency of terminology and then classified into groups based on segment and pack size. The data was then analysed to derive high-level inferences such as the share of flexible packaging and small format packaging, and the products most sold in these formats. In this phase, a deeper analysis has been carried out to shortlist products, markets (rural or urban) and interventions best suited for action at scale.

Limitation

A major limitation is the fact that standardised terminology for packaging formats is not available. For instance, 'plastic pouch' was the most commonly used packaging format, accounting for 87% of all units sold. However, it was not possible to segregate the data to identify for instance, whether the term 'plastic pouch' was used to describe monolayer pouches (such as milk pouches) or multi-layer structures (used for chips, shampoos, coffee, for example), or both

Definitions

The definitions of small format packaging and sachet packaging used in this report are the same as those used in the first insights report:

- Small format packaging refers to packaging containing upto 50 grams of solid product, or upto 50 ml of liquid product.
- Sachet packaging refers to packaging containing upto 10 grams of solid product, or upto 10 ml of liquid product.

Thus, sachets are a subset of small formats.

Approach

The distribution of products in the three major FMCG segments: food and beverage (F&B), personal care, and home care was studied by plotting the number of units placed-on-market versus (1) pack size/SKU, and, (2) market (rural or urban) (Figures 3 to 10).

While data for many products within the segments were available, only the top three in terms of number of units sold, were selected for study. A total of eight such 'priority products' were studied, three each from the F&B and personal care segments, and, two from the home care segment (very few products in this segment are sold in small formats at all, so only two were picked).

Through the analysis we tried to uncover features or trends in the distribution (of SKUs and markets), that might indicate what kind of intervention would be most appropriate. To support the analysis, corroborate results and gain deeper insights, brand owners were consulted via online interviews. This also helped

- understand why small format packaging is popular for certain products,
- identify the composition of packaging typically used, any variations, and,
- identify solutions, and challenges in adopting those solutions.

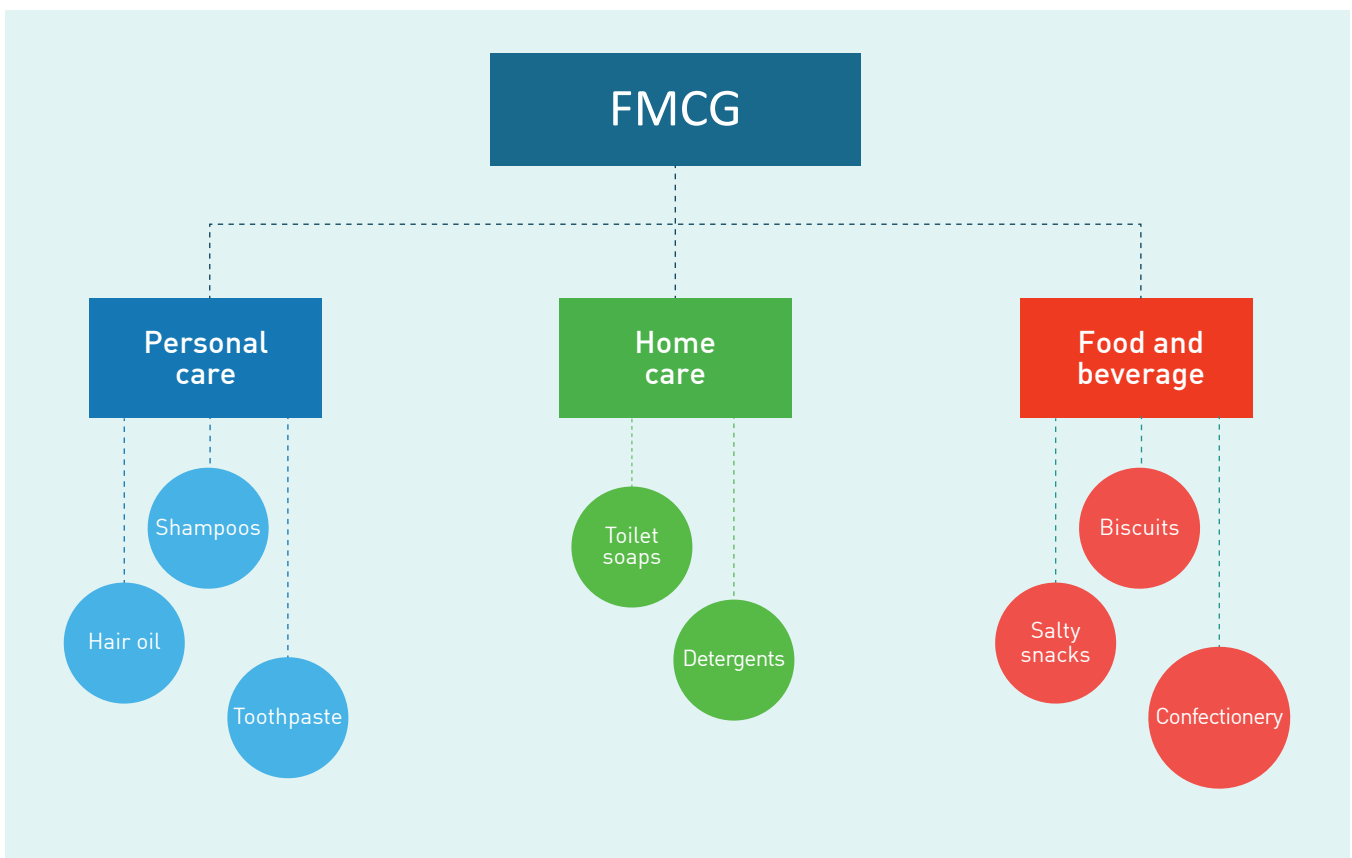


Figure 1: Choice of products by FMCG category chosen for analysis

Deep dive into priority products



In 2021, a total of 304 billion units of products were sold across the three FMCG segments, 75% of which were in small formats.

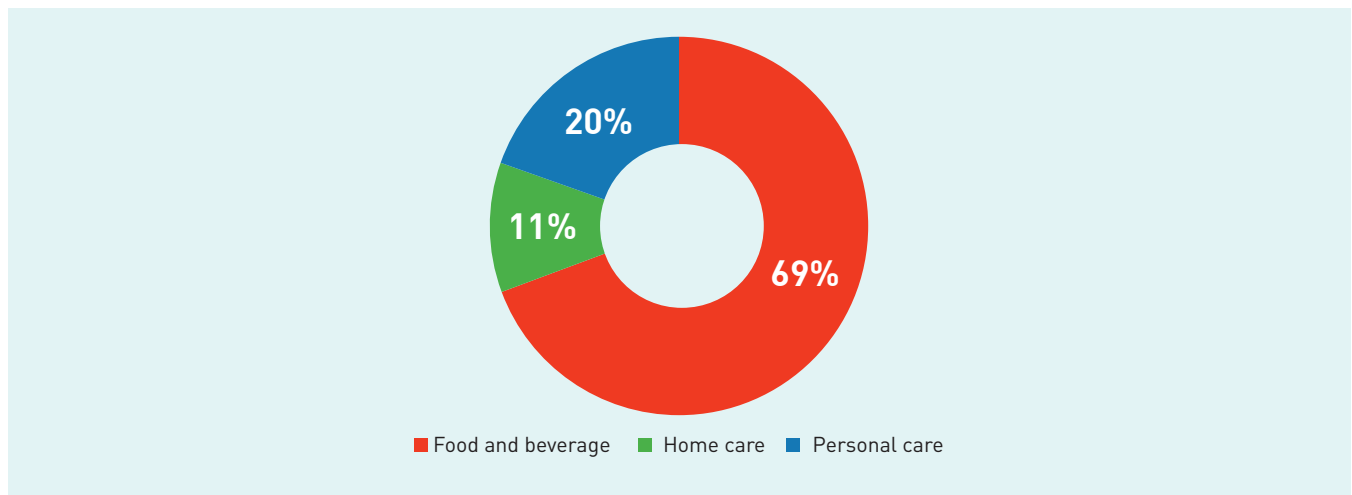


Figure 2: Share of FMCG products placed-on-market by category

Food and beverage

In 2021, the F&B segment accounted for 69% of all FMCG units sold. Most of these were sold in flexible packaging (93%).

Three out of four F&B units are sold in small formats (~78%) and a third of these were sold in the form of sachets (~35%).

Three products together accounted for 74% of the F&B small format sales: salty snacks (33%), biscuits (21%) and confectionery (20%).

Uncollected plastic litter is most commonly made up of packaging from these products.³

Salty snacks

Strings of small format salty snacks, such as chips, namkeen⁴, and salted nuts, are a common sight at wayside stalls, vendors, and grocery shops across the country. Nearly 54 billion units of salty snacks were sold in 2021, 97% of which were sold in small format packaging (88% in pack sizes between 10 g and 50 g, and, 9% in sachets, i.e., below 10 g).

These small packs are sold at a low price point, thus making them accessible and convenient on-the-go single-serve snacks. Data suggest that snacks in the range of 24 g to 26 g are the most popular (in terms of number of units sold):

³Break Free From Plastic (2021). Plastic waste brand audit India 2021. Available at <https://brandaudit.breakfreefromplastic.org/wp-content/uploads/2022/11/2021-unwrapped.pdf>. Accessed on 03 November 2023.

⁴Ready-to-eat savouries usually fried and made of potato, cereals, pulses, or flour.

17% of small format unit sales). These are usually impulse purchase packs, priced at INR 10. It is also observed that sales of sachets are a little higher in rural markets, while packs between 10 g and 50 g dominate the urban markets.

Data indicate that almost all units sold (>99%) are described as 'plastic pouches' in the Nielsen database.

Interviews with brand owners manufacturing salty snack products suggested that such packaging is typically made up of laminates of polyolefins with metalized PET, that is,

PET II metalized PET II PP (or PE)

The presence of polyester film and a metal layer makes such packaging hard to recycle. PET is used mostly because it is easily printed upon, cheaper than the polyolefin counterpart, but also because it offers better resistance to puncturing/tearing for products with sharp edges, for example. The metal layer is the crucial barrier against oxygen and light (both of which cause rancidity) and allows longer shelf-life in Indian conditions, accounting for rough handling, and longer time taken to reach final retail destination, two to four weeks.

For some snacks, the size of packaging is larger than that required to contain the product, which is related to the need for the product to be visible on shop shelves.

In many developed nations, two-layer structures predominate, because of shorter shelf-life expectation (four to six months in India and about three months in Western countries). Some businesses in India are transitioning to mono-polymer polyolefin structures such as,

BOPP II metalized BOPP II PP (or PE)

These packaging structures are technically recyclable and desirable in the Indian context. However, collection remains a bottleneck because of small format size and low value.

Some considerations when making this transition are maintaining effective barrier properties given the vulnerability of oily, salty snacks to rancidity, and, to some extent, the pack's tearability. Other factors determining the requirements for performance of the packaging include the time taken to place products on market shelves (five to six weeks after manufacture), handling (rough) and ambient temperatures (high in Indian environments, making the product vulnerable to oxidation).

Interviews with brands suggested that it would be challenging to popularize refill models because Food Safety and Standards Authority of India (FSSAI) requirements related to date of manufacture, expiry date, and so on, would be hard to comply with. If refill stations were to be set up across the country, the cost to brands would be quite high.

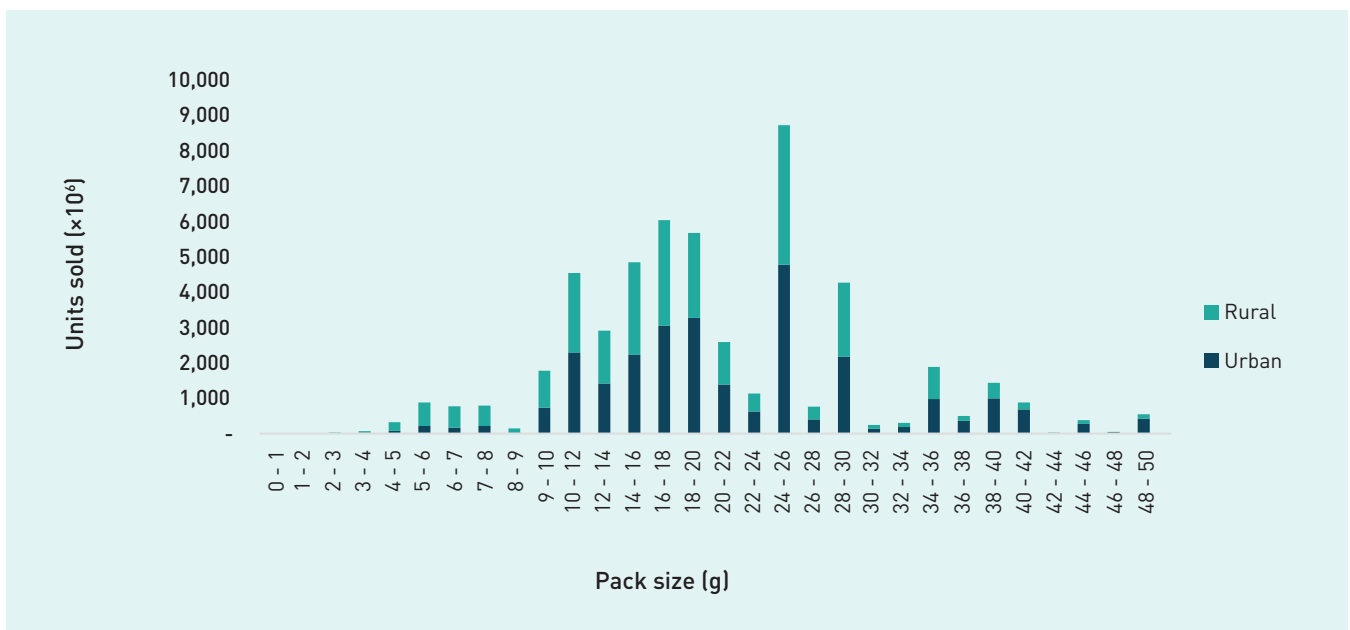


Figure 3: Unit sales of small format salty snacks sales across pack sizes

Biscuits

Biscuits are a common accompaniment to tea in most Indian settings, whether domestic or on the street. Fifty billion units of biscuits were sold in 2021, a large portion of which (66%) were sold in small formats, with the remaining sold mostly in packs of 50 g to 250 g (33%).

Data show that biscuits in the pack size ranges of 28 g to 30 g, and 34 g to 36 g, are the most popular as measured by number of units sold (16% and 15% of small format unit sales, respectively). There is little difference between the rural and urban sale of small formats.

Again, as with salty snacks, almost all units sold were recorded as sold in 'plastic pouches' (>99%).

However, the term 'plastic pouches' is likely to refer to a range of different packaging compositions and not any one standard format. Biscuits marketed at somewhat low-price points are generally packaged in multi-layered plastics (MLPs). Conversations with brand owners suggest that some brands use monolayer PP packaging, and some use blends of PP and PE or PP and PET.

Some 'exclusive' brands could be packaged in metallised films consisting of PP, most often, with vacuum-deposited metal.

Even though a large proportion of biscuit packaging is monolayer and recyclable, collection is a significant challenge because: the time taken by waste collectors to collect sufficient quantities is not commensurate with the value of waste packaging collected, and end markets for recyclate are not well developed resulting in low value.



Photo courtesy: India Plastics Pact collection, 2024

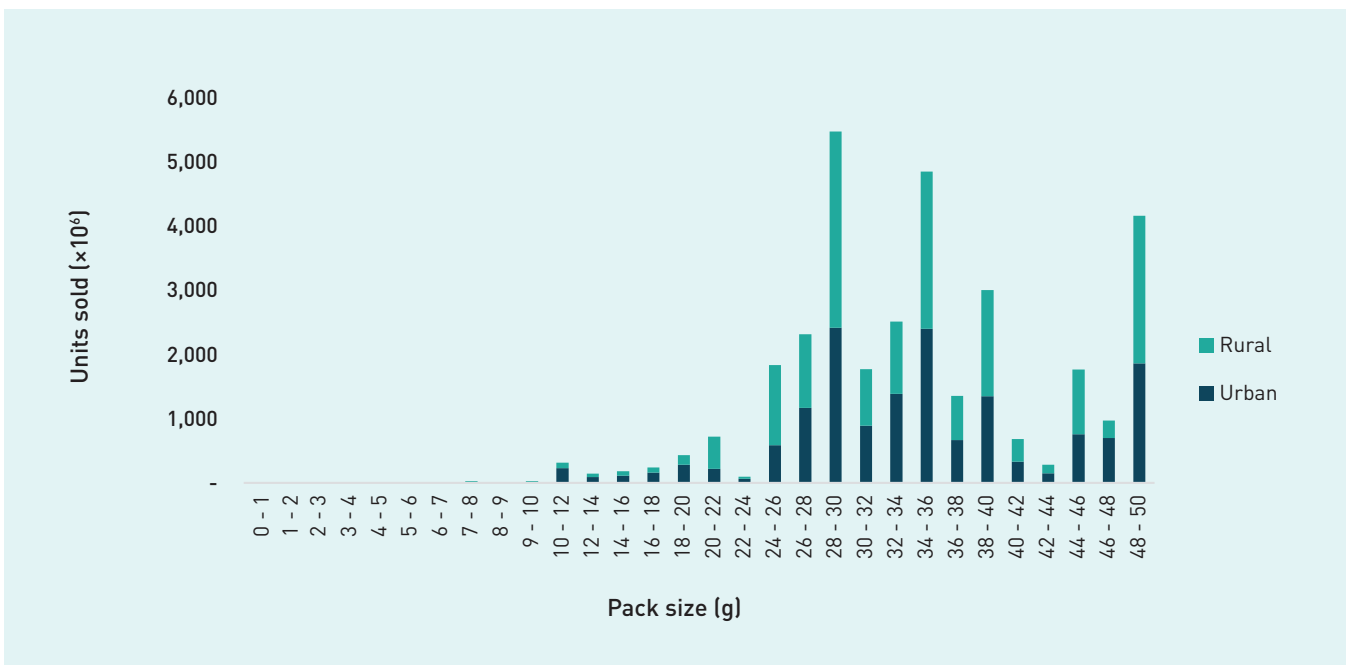


Figure 4: Unit sales of small format biscuit sales across pack sizes

Confectionery

Thirty-two billion units of confectionery items were sold in 2021: this category in the Nielsen dataset includes eclairs, lollipops, jelly cubes, toffees and chewing gum, all of which are generally sold in small formats.

The data show that 99% of confectionery units are sold in small formats (95% in sachets and 4% in pack sizes between 10 g to 50 g). Confectionery items in the pack size range of 2 g to 3 g are the most popular in terms of number of units sold (39% of small format unit sales for confectionery items). These are mostly single-serve items.

While the share of rural and urban markets is more or less equal in terms of sachet sales, urban markets dominate in pack sizes between 10 g and 50 g.

The majority, 87%, of all confectionery units sold are packaged in 'plastic pouches', and 12% are 'economically wrapped packs' (EWPs). It is unclear how these EWPs are different from plastic pouches.

Interviews with brand owners revealed that confectionery items are typically packaged in two ways: twist wrap and flow wrap. Twist wrap is typically monolayer PET film and is used for

products like eclairs and toffees which do not need to be sealed. Flow wraps are typically laminates of PP and PET and are used for sealed products such as chewing gum. The especially small size of the packaging makes them more prone to littering.

In both the above products, there is a move among large and small companies to substitute the PET layer with polyolefins, so as to improve the recyclability of packaging. Overall, packaging specifications are not the same as those in Western countries because of India's tropical climate: better barriers are needed. Also, PET is a more popular resin than PP in India because it is widely available, as is the machinery to handle it. However, these will have to be modified to accommodate changed structures, such as those with polyolefins in place of PET. For items of confectionery, collection is the biggest challenge given the small packaging size, lack of viable end-markets and nature of consumption (prone to littering). The low-cost margins associated with these products might limit the scope for designing more recyclable packaging; even if better designs were used, collection would still remain the bottleneck.

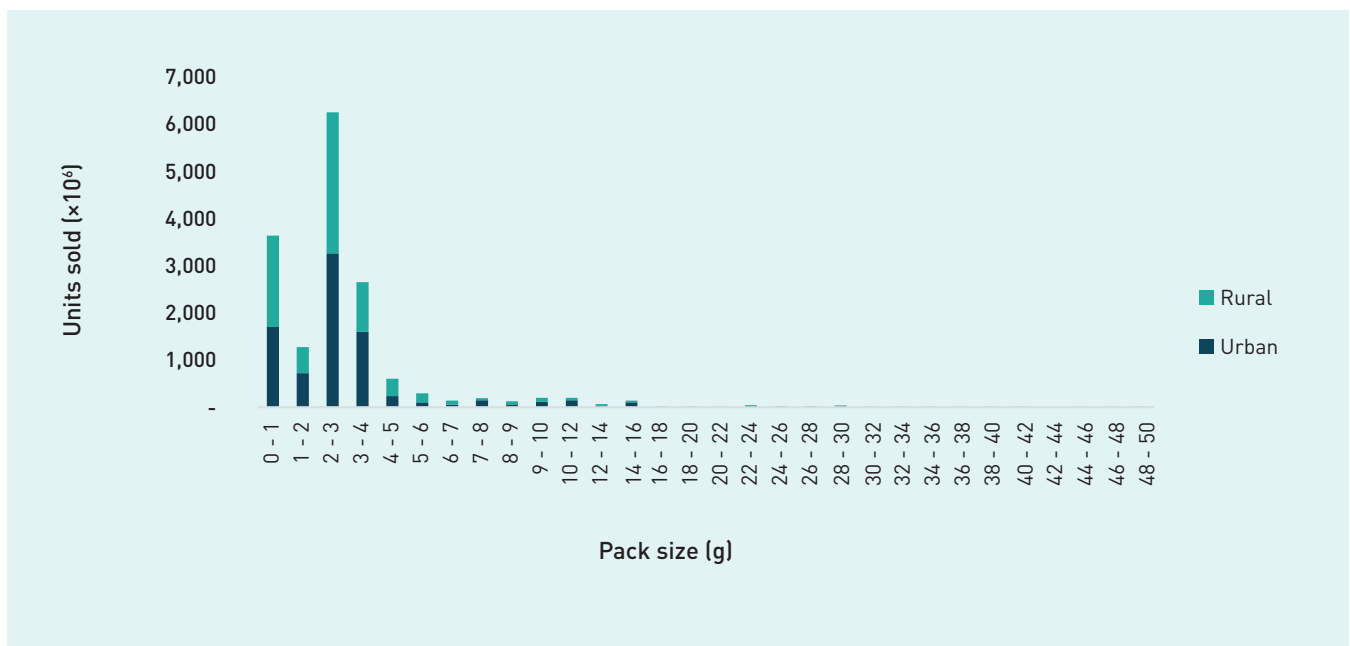


Figure 5: Unit sales of small format confectionery sales across pack sizes

Personal care

In 2021, the personal care segment accounted for 20% of all FMCG units sold. A majority of these were sold in flexible packaging (84%). Most products in this category are sold in small formats (95%) and 88% (of the 95%) are sold in the form of sachets.

Three products together accounted for 91% of the personal care small format sales: shampoos (73%), hair oil (11%) and toothpaste (6%). Shampoos are almost entirely sold in sachets (that is, 99% of shampoos).

Shampoos

Nearly 41 billion units of shampoos were sold in India in 2021; 99% of these were in sachets.

Data suggest that shampoos in the pack size range of 3 g to 4 g are the most popular as measured by number of units sold (46% of small format unit sales). The share of rural markets is greater in smaller sachets (2 g to 7 g) but there is little difference between the rural and urban demand for pack sizes above this.

The data show that most units (99%) are sold in 'plastic pouches'. Interviews with brand owners revealed that this could include 2-ply or 3-ply structures such as

PET II PE, PET II metallized PET II PE, and sometimes, BOPP II metallized BOPP II PE, with metallization primarily for aesthetic purposes.

The BOPP layer can provide as good a barrier against the product drying out (Water Vapour Transmission Rate) as PET, for shampoos. Compositions containing PET with PE (PET II PE and PET II Met PET II PE), are not commonly recycled and are not easily collected, either.

More recyclable structures using polymer layers from the same family, such as BOPP II metallized BOPP II PE are available. Brands would be confident about making a transition to such more sustainable (but more costly) packaging within a level playing field, that would not weaken their customer base.

The popularity of the sachet format in this product category is largely driven by a perceived higher cost of larger volumes of shampoo sold in rigid packaging. In smaller cities and towns, a small format pack is also seen as better because it is possible to use the entire quantity of shampoo without wastage. Portion control is relatively harder to achieve when shampoo is poured from larger rigid bottles.

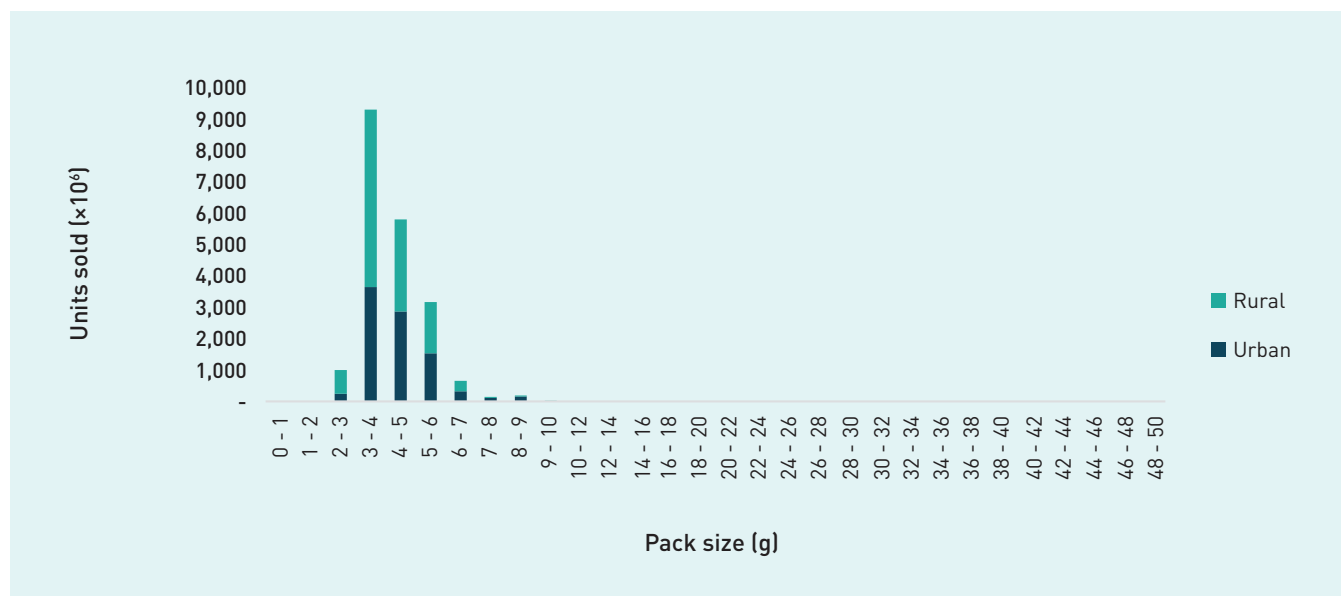


Figure 6: Unit sales of small format shampoo sales across pack sizes

Hair oil

Seven billion units of hair oil were sold in 2021, 89% of which were sold in small formats (77% in sachets, and 12% in pack sizes between 10 g and 50 g). Data suggest that the 2 g to 3 g size range is most popular, in terms of number of units sold (46% of small format unit sales). There is little difference between the rural and urban demand for small formats.

The data show that 87% of small format hair oil units are sold in 'plastic pouches', and 12% in 'plastic bottles'. Conversations with brand owners revealed that these plastic pouches are typically laminates of PET and PE. Variations include metallization for aesthetic purposes and the use of a nylon layer for additional barrier properties in value-added hair oils. These plastic pouches are not commonly collected or recycled.

For hair oil, as for confectionery and other FMCG categories, collection is the biggest challenge given the small packaging size, lack of viable

end-markets. The low-cost margins associated with these products might limit the scope for designing more recyclable packaging; even if better designs were used, collection would still remain a bottleneck.



Photo courtesy: India Plastics Pact collection, 2024

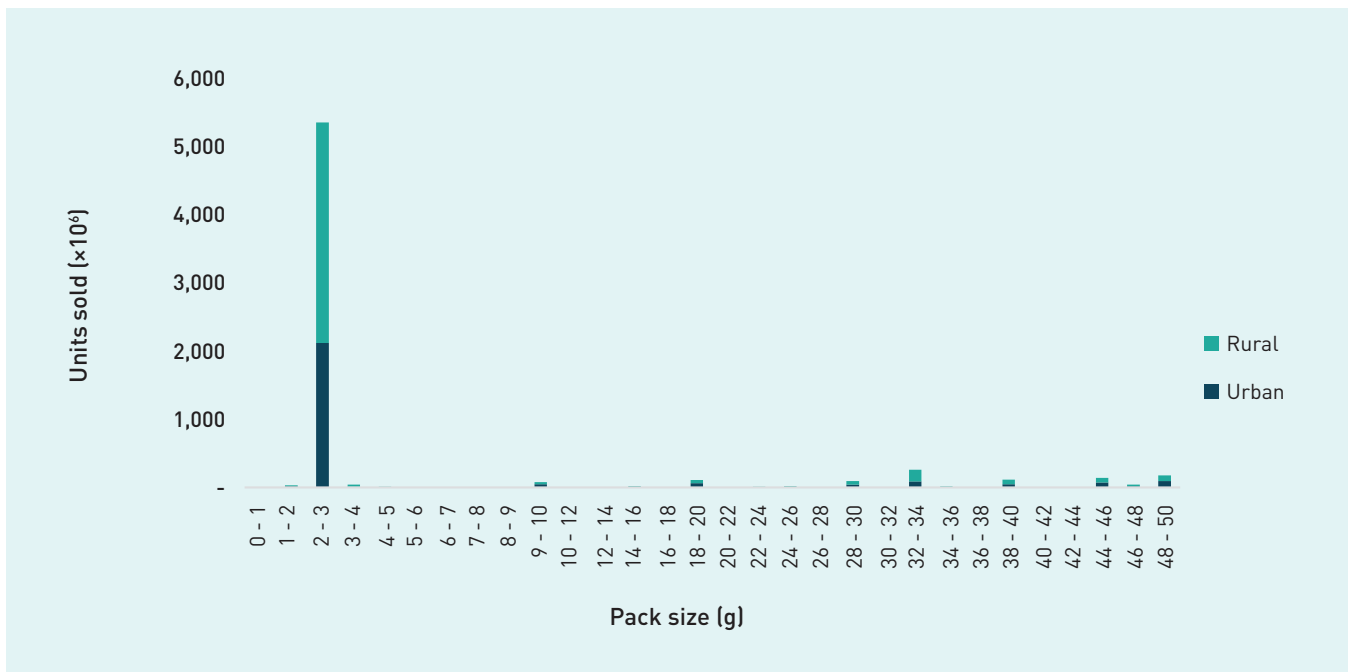


Figure 7: Unit sales of small format hair oil sales across pack sizes

Toothpaste

Four billion units of toothpaste were sold in 2021, 77% of which were sold in small formats (mostly in pack sizes between 10 g and 50 g). Data suggest that toothpastes in the pack size range of 16 g to 20 g are the most popular as measured by number of units sold (47% of small format unit sales). There is little difference between the rural and urban demand for small formats.

The data show that 87% of small format toothpaste units are sold in 'plastic tubes' and 12% are sold in 'plastic pouches'. Plastic tubes are usually made of plastic laminates and a layer of aluminium while plastic pouches are generally multi-layered plastics (MLPs); neither is commonly recycled.

Discussions with stakeholders indicate that recyclable alternatives (entirely made of plastic, known in industry as plastic-based laminates or

PBLs) to aluminium-based plastic laminates (ABL) are available. However, the relatively low-price points for small formats combined with the higher cost of PBLs (relative to that for ABLs) make a transition challenging.



Photo courtesy: India Plastics Pact collection, 2024

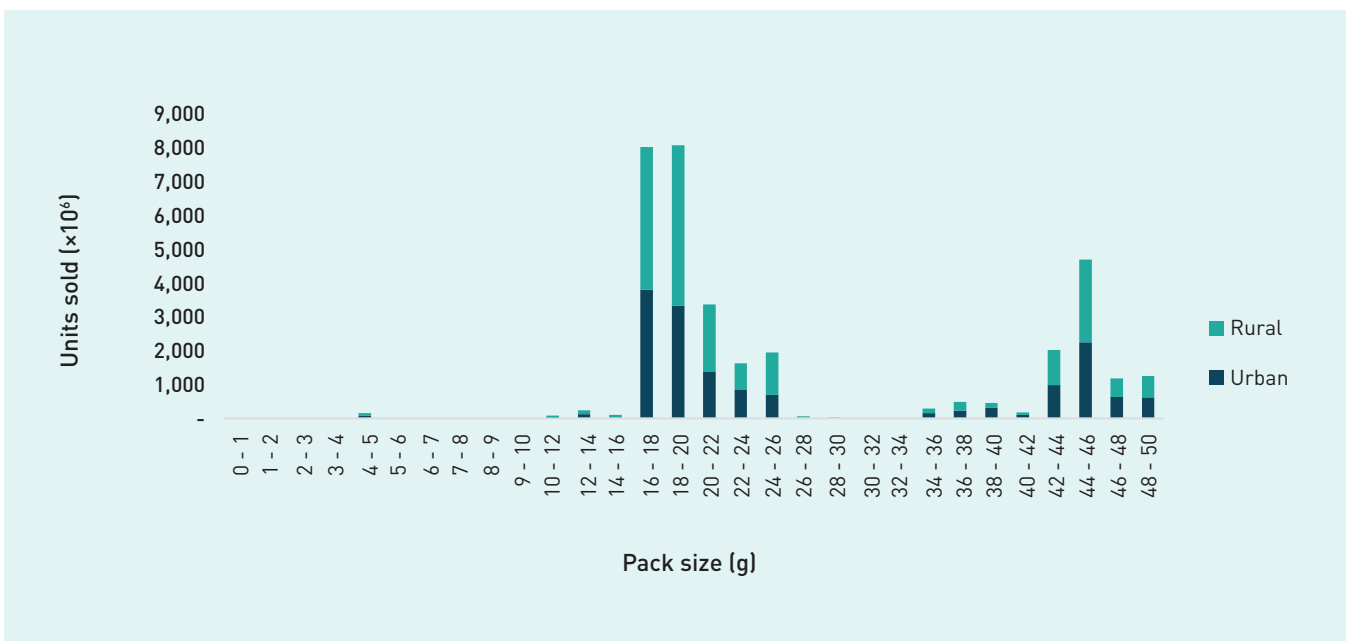


Figure 8: Unit sales of small format toothpaste sales across pack sizes

Home care

In 2021, the home care segment accounted for 11% of all FMCG units sold. Most of these were sold in flexible packaging (98%). This segment has the least share of small format units sold: only 17% of home care products are sold in small formats, and only 12% of these are sachets.

Two products together accounted for 97% of the home care small format sales: toilet soaps (53%) and washing powder (44%).

Toilet soaps

Six billion units of toilet soap were sold in 2021, 44% of which were sold in small formats (almost entirely in pack sizes between 10 g and 50 g).

Data suggest that toilet soaps in the pack size range 44 g to 46 g are the most popular in terms of number of units sold (41% of small format unit sales). Pack sizes between 9 g and 18 g are more popular in urban markets; there is little difference between the rural and urban demand for the larger pack sizes.

The data indicate that 87% of small format soap units are sold in 'economically wrapped packs' (EWP), and 13% in 'plastic pouches'. The EWPs could refer to coated paper packaging (PET II paper II PE), while 'plastic pouches' could refer to monopolymer PP film.

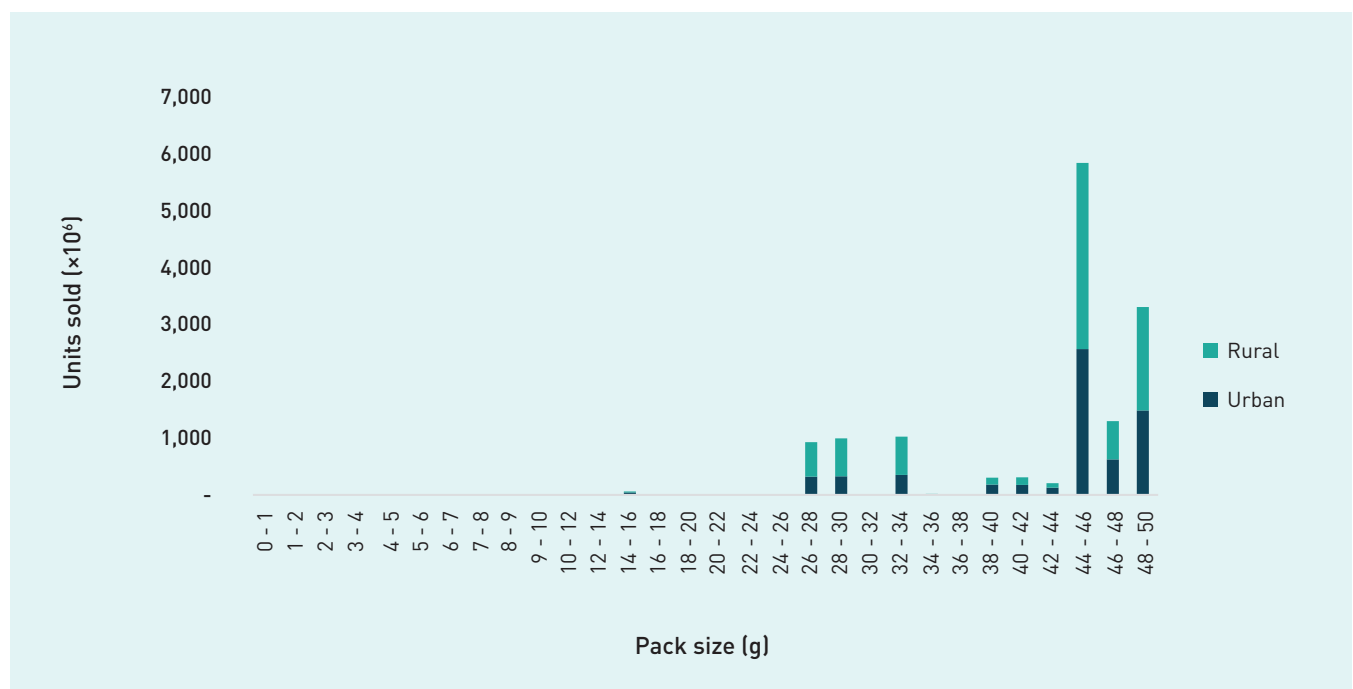


Figure 9: Unit sales of small format toilet soap sales across pack sizes

Detergents (powders and liquids)

Eleven billion units of detergents were sold in 2021, only 21% of which were sold in small formats (15% in pack sizes between 10 g and 50 g, and 6% in sachets). Data suggest that detergents in the pack size range of 10 g to 12 g are the most popular in terms of number of units sold (53% of small format unit sales). There is little difference between the rural and urban demand for small formats.

PET II PE structures are used for small packets of detergent because their turnover is quicker and high barrier properties are not required. Larger packs need better barrier properties because they stay longer on shop shelves:

guarantee that small, albeit rigid containers will be collected.

The data indicate that almost all units sold are 'plastic pouches' (>99%).

Summary

The data presented for the eight priority products discussed above, point to the number of units of packaging generated in the small and sachet formats. Interviews with brands suggest incompatible multi-layer packaging is the biggest challenge to addressing pollution caused by small formats. However, this would address only one part of the problem; ensuring that such formats are collected will still need to be worked out.

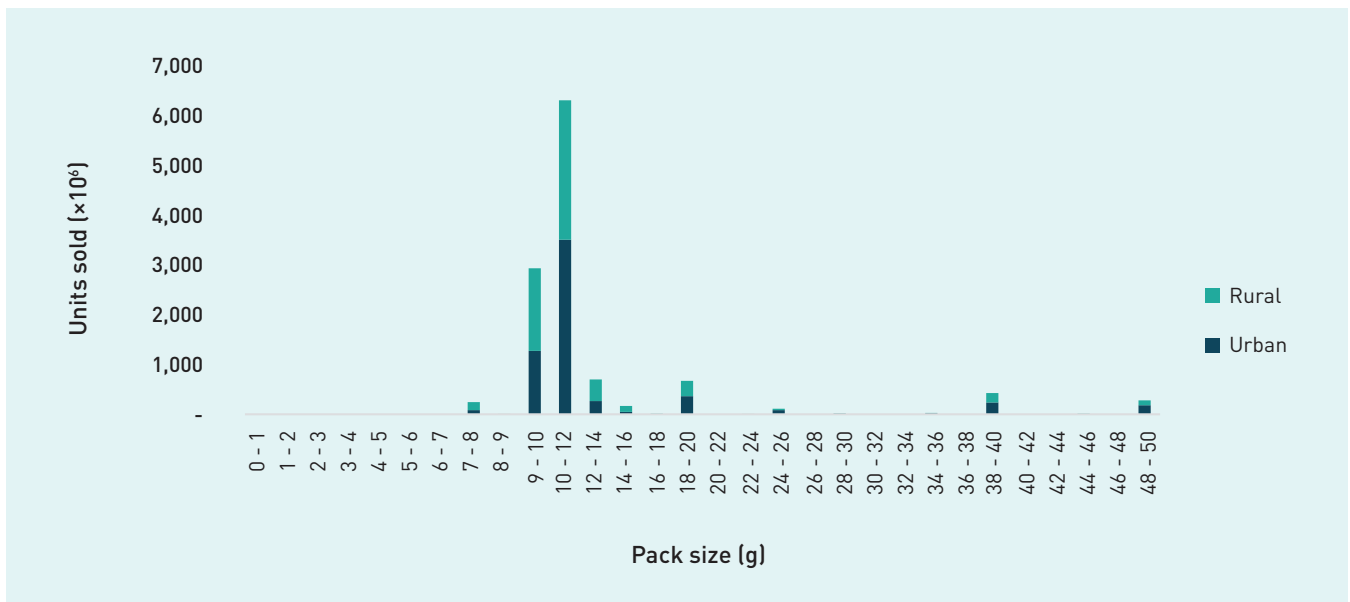


Figure 10: Unit sales of small format detergent sales across pack sizes

packaging should protect the detergent powder from moisture (to prevent clumping and allow easy dissolution in water) and oxidation (which affects fragrance, and the perception of freshness after washing).

Some brands are experimenting with small rigid format packaging, concentrated forms of detergent, twin packs and other such methods of shifting away from sachets; however, price is the crucial factor and rigid formats are more expensive than flexible formats. It is also not a

At present, almost all the priority products studied are packaged in low-value packaging, which is not collected and even if it does get collected, it is not recyclable in the current situation. Transitioning to recyclable alternatives increases end-market potential which might help improve the post-consumer price of such packaging.

An examination of the data by market of sale (rural versus urban) did not reveal any trends that could help focus action.



Potential solutions

Most of the eight priority products identified (salty snacks, biscuits, confectionery items, shampoos, hair oil, toothpastes, toilet soaps, and detergents) are sold in multi-layer packaging, for which collection and recycling technology is lacking in India. Moreover, the small size and light weight of small format packaging means that the packaging is usually littered, and not collected for disposal.

It is evident that changes are needed across the value chain (from design, to use, disposal, and recycling) to ensure that small format packaging is collected, segregated and placed back into the value chain, at scale.

The 2022 Extended Producer Responsibility (EPR) Guidelines notified by the Government of India are expected to encourage the development of more sustainable packaging. The deadlines to achieve the targets in the guidelines are some distance away but urgent action is needed now, to address plastic pollution due to small format packaging.

Upstream innovation is needed to make such packaging more recyclable, and hence increase the likelihood of small formats being collected. There is also potential for adoption of alternative delivery systems such as reuse-refill; especially as replacements for small format packaging, maintaining low price points would be key. For food products, regulation would need to quickly evolve alongside, for impact. No matter which way it is analysed, a robust collection, segregation,

and aggregation system must be developed to ensure that such packaging is channelized to recyclers.

In the first phase, a conceptual framework for possible solutions was introduced, based on the principles Eliminate, Innovate, and Circulate, which together contribute to creating a circular economy.

- **Eliminate** unnecessary and problematic plastic items
- **Innovate** to ensure that the plastics we do need are reusable, recyclable, or compostable
- **Circulate** all the plastic items we use to keep them in the economy and out of the environment

It is clear that the continued growth of sachets, if unchecked and without solutions, will cause huge environmental impacts for India. In recent memory, many of the products sold in sachets were sold via different delivery models that negated the use of single trip packaging: some of these 'old ways' could be reintroduced. The pressure to bring in bans and extreme interventions will only grow if businesses and producers do not collaborate on initiating solutions or exploring options. In this chapter an attempt is made to apply the Eliminate-Innovate-Circulate framework in the identification of solutions for the priority products.



Eliminate

The single-use and on-the-go nature of small format packaging results in large volumes entering the waste stream. While it is preferable to eliminate such packaging entirely, this may not be a viable choice in countries such as India, where many consumers prefer small formats as they can only afford to buy small quantities at a time. An extreme sensitivity to price points translates into the popularity of small formats. Equally important are certain

perceptions associated with the use of small-format products such as shampoos – for example, the perception that over-pouring from larger rigid containers leads to waste, drives consumers to buy multiple sachets instead, whose use allows a greater degree of portion control.

Some brands are experimenting with formats such as powders, concentrated products, and bars in different markets, rural and urban.



Innovate

Where elimination is not viable, businesses should innovate to ensure that packaging remains in the economy for longer by introducing reusable packaging and ensuring single-use packaging is being recycled back into packaging. Most small format packaging used today is not recyclable because of its multi-layered structure. In the past few years advancements have been made resulting in the development of monolayer or compatible multi-layer packaging which provides equivalent barrier properties while being recyclable.

EPL Limited, a global tube-packaging company headquartered in Mumbai, partnered with Colgate-Palmolive to develop mono-layer HDPE tubes which can replace the multi-layer plastic aluminium tubes currently used by many toothpaste manufacturers.⁵

Mono-layer flexible packaging with good barrier properties has been developed by several companies around the world. These can replace the multi-layer packaging used for packaging salty snacks, biscuits and confectionery items. Many of the brand owners interviewed are already running trials of monolayer or polyolefin-based compatible multi-layer packaging.

Brands can also consider alternative business models which can help reduce plastic waste generation while ensuring that consumers still have access to affordable products. Reuse models can help do this by allowing consumers to buy desired quantities of a product in reusable, refillable packaging. Such a model is well-suited to home care and personal care products where hygiene requirements are not as stringent as those for food and beverages. Of the priority products identified, reuse models for shampoos, toothpastes and detergents have already been piloted by several businesses around the world.

Several challenges were highlighted by brand owners with regard to adopting reuse models. For starters, such models work better in regions with a high population density and hence are difficult to implement in rural areas. Running a successful reuse model at a scale large enough to have an impact will require significant investment in establishing reverse logistics and an increased demand among consumers.

There are also concerns regarding hygiene, increased exposure to moisture and oxygen, and regulatory restrictions on food and beverage products and skin-contact personal care products.

⁵ Colgate-Palmolive (2021, August 2024). Colgate-Palmolive launches India's first ever recyclable toothpaste tubes. Available at <https://www.colgateinvestors.co.in/media/2747/pressrelease-recyclabletpsugust2021-corporate.pdf>. Accessed on 03 November 2023.

Despite the presence of several challenges, there is an increase in the number of businesses trialling such solutions. This may be due to the inclusion of obligations for reuse of packaging in the EPR Guidelines, companies' internal targets or commitments via voluntary Pacts in different countries, as well as the evolving Global Plastics Treaty.

However, reuse obligations in the Indian EPR regulation only apply to rigid plastic packaging with volume or weight equal or more than 0.9 litre or kg and leave small formats out of the ambit. A focus on low-quantity, low-cost reuse-refill, for example, could result in significant reductions of small format use.



Circulate

Upstream innovations which improve recyclability of packaging need to be supported by robust downstream collection and recycling systems to ensure that small format packaging waste is effectively recycled in practice and at scale.

Small format packaging is mostly made of multi-layered plastics which are difficult to recycle and have little value at end-of-life, resulting in low collection rates. Even if the packaging is recyclable (monolayer or compatible multilayer) such as in the case of biscuits, the flexibility and small size (dimensions) make it hard to collect and more prone to littering.

It is important to ensure the packaging is collected, segregated, and effective waste management

practices are put in place. As upstream design innovations can take longer to materialize, it is prudent to focus on improving collection rates, which can be done by

- putting in place take-back systems for consumers, and
- incentivizing the collection of such waste by informal waste pickers.

Along with improving collection rates, there is a need to invest in MLP recycling technology (for the few products that will continue to be packaged in MLP). Currently, MLPs are recycled into low-quality applications by only a few recycling units in India. Efforts must focus on increasing recycling capacity for such technologies.

Points to note

Apart from insights gained into aspects such as consumer behaviour, composition of packaging structures and products most commonly sold in small formats, discussions with different stakeholders indicated the following:

- Absence of a roadmap, led by industry, for infrastructure development, hampers change in the composition of flexible packaging by brands: at this moment it is unknown whether investments in recycling of flexibles is a priority, for example.
- A collaboratively developed and agreed-upon roadmap will lead to a level playing field for brands, recyclers, and converters. This will, in turn, bring about a much faster shift to more recyclable packaging, even at a higher cost than for current packaging.
- Large pack sizes attract the attention of consumers in shop shelves, even though the quantity of product packaged is relatively small. Building awareness of the environmental benefits of smaller pack sizes would help reduce packaging quantities consumed.

Conclusion and next steps



Small format and sachet packaging is used extensively in India and many other countries with similar socio-economic profiles. Its use cannot be eliminated for reasons elaborated in the report, however, there is an imperative for businesses to ensure better quality packaging is placed on market to drive up the post-consumer price of small format waste.

Simultaneously, there is a need to pilot and scale-up alternative delivery models, especially for personal care and home care products. Providing a level playing field by consistent and strong implementation of policies will allow users of small formats to switch to mono-materials, the design and technology for which is already available, without having to pass on costs to consumers (sometimes a doubling in price).

Priority action areas in India over the next few years could be

- Short term (six to twelve months): strongly incentivize collection of all flexible packaging (including small formats) and identify end markets for recycle. This is supported by the requirement in the EPR Guidelines for businesses to collect 100% by weight of the plastic packaging they place on market from FY 2023-24 onwards.

- Short to midterm (one to three years)
 - a. shift away from PET-polyolefin usage to all polyolefin-based packaging for small formats, and,
 - b. scale up reuse and refill systems especially for home care and personal care products.
- Long term (four to seven years)
 - a. shift to surface-printed, surface-metallized packaging, and,
 - b. explore the possibility of channelizing non-recyclable small formats to advanced chemical recycling.

For each product it will be necessary to understand how the solutions proposed in this report fit into the Eliminate-Innovate-Circulate system, to what extent those address the challenge, given that collection is a vital step; what level of innovation the solutions proposed require, the potential impact on cost and potential impact on utility. The behaviour change required to support a shift away from current consumption to a different model (say, refill), will have to be determined and encouraged by appropriate campaigns and publicity; the need for policy measures will also need to be assessed.

However, it is clear that even mono-material formats are unlikely to have a significant impact on littering because disposal/collection and small size apart from packaging composition are key aspects. References in the literature suggest a strong dependence on small formats and sachets arising from their affordability (usually in the INR 1 to INR 10 range); however, it is also true that many consumers can afford higher prices for small quantities. Such behavioural aspects can be understood better via surveys.

Perhaps there is a case for marketing different models to different areas (socio-economic groupings) when we consider different ways in which products can be shifted out of small formats into alternative models. Some of these alternative delivery models include a change of product format from liquid to solid, are already being trialled by some FMCG companies.

Overall, while the move to mono-layer structures aligns with a similar approach to larger flexibles it may not be particularly effective for this format unless collection is incentivized/encouraged.



Photo courtesy: India Plastics Pact collection, 2024

Annex

List of 29 FMCG products studied in Phase 1

Segment	Product
Food and beverage	Milk powder
	Instant coffee
	Blended spices
	Pure spices
	Packaged tea
	Coconut oil
	Refined oil
	Non-refined oil
	Packaged pure ghee
	Ketchup
	Salty snacks
	Chocolates
	Breakfast cereal
	Biscuits
	Confectionery
	Still soft drinks
	Sparkling soft drinks
	Personal care
Skin creams	
Tooth powder	
Talcum powder	
Hair oil	
Shampoo	
Home care	Toilet soaps
	Toilet cleaners
	Washing powder
	Floor cleaners
	Detergents
	Utensil cleaners



About the India Plastics Pact

The India Plastics Pact, launched in 2021, unites businesses, governments, NGOs and citizens to create a circular plastics economy in India. It was developed by Confederation of Indian Industry (CII) and WWF India. The CII-ITC Centre of Excellence for Sustainable Development (CESD) anchors the India Plastics Pact, within CII. The initiative is supported by WRAP, a global NGO based in the UK.

It is the first Plastics Pact in Asia. As of December 2023, there are 13 Plastics Pacts spread across the globe. 54 organizations are currently part of the India Plastics Pact. The Pact works on all plastic resins at all stages of the plastics value chain.



Confederation of Indian Industry

About Confederation of Indian Industry

The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, Government and civil society, through advisory and consultative processes.

For more than 125 years, CII has been engaged in shaping India's development journey and works proactively on transforming Indian Industry's engagement in national development. With its extensive network across the country and the world, CII serves as a reference point for Indian industry and the international business community.

As India strategizes for the next 25 years to India@100, Indian industry must scale the competitiveness ladder to drive growth. CII, with the Theme for 2023-24 as 'Towards a Competitive and Sustainable India@100: Growth, Inclusiveness, Globalisation, Building Trust' has prioritized 6 action themes that will catalyze the journey of the country towards the vision of India@100.

With 65 offices, including 10 Centres of Excellence, in India, and 8 overseas offices in Australia, Egypt, Germany, Indonesia, Singapore, UAE, UK, and USA, as well as institutional partnerships with 350 counterpart organizations in 133 countries, CII serves as a reference point for Indian industry and the international business community.



About WRAP

WRAP is a UK based international resources and climate action NGO working around the globe to tackle the causes of the climate crisis and give the planet a sustainable future. WRAP is working with businesses across the plastics value chain globally through the Plastics Pact network, transforming how we make, use, collect, sort, reuse and recycle plastics to create a circular economy.

WRAP set up, and manages, the UK Plastics Pact. Established in 2018, in partnership with The Ellen MacArthur Foundation, it has catalyzed 13 Plastics Pacts to be developed including South Africa, US, Chile, Kenya, and Colombia. WRAP was instrumental in establishing the India Plastics Pact with CII and WWF-India. The Plastics Pact network encompasses over 1,000 leading plastics businesses in their membership. WRAP provides operational and technical support to the India Plastics Pact and other Pacts. WRAP also runs a knowledge sharing platform between the various circular plastics initiatives internationally.



UKRI India

UKRI India plays a key role in enhancing the research and innovation collaboration between the UK and India. Since 2008, the UK and Indian governments, and third parties, have together invested over £330 million in co-funded research and innovation programmes.

This investment has brought about more than 258 individual projects. The projects were funded by over 15 funding agencies, bringing together more than 220 lead institutions from the UK and India. These research projects have generated more than £450 million in further funding, mainly from public bodies but also from non-profit organisations and commercial entities, attesting the relevance of these projects.



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